t,

```
PRINTER OF THE PRINTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nucleic -
                                             misc_difference
                                                                                                                                misc_difference
                                                                                                                                                                                                               misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           T34991 standard; cDNA; 1271 BP.
T34991;
06-NOV-1996 (first entry)
Vascular IBP-like growth factor cDNA.
Vascular IBF-like growth factor; VIGF;
insulin-like growth factor binding protein; agonist; antagonist;
muscle wastage; osteoporosis; implant fixation; wound healing;
therapy; diagnosis; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            در ،
                                                                                                                                                                                                                                                                                                  misc_difference
                                                                                                                                                                                                                                                                                                                                                                                     misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                               mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    signal_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 İs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nucleic search, using sw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        diagnosis; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240622 segs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OLIGO_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-037-460-1
1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 96.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N_Geneseq_34:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       мау
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGCTTCCCACCAGCAAAGA......GTTNCCTNTNTCTNAAGGAC 1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GenCore version 4.5 Copyright (c) 1993 - 1998 Compugen Ltd
                                                                                                                              /*tag= f
/note= "base 1212 i
specification"
1225
                                                                                                                                                                                                               /*tag= e
/note= "base 1096 :
specification"
= 1212
                                       specification"
1255
                                                                                                                                                                                                                                                                                                                                                                                   /*tag=
653
                                                                                                                                                                                                                                                                                                specification"
                                                                                   /*tag= g
/note= "base
                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag= b
121. .609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      58. .120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3, 1999, 16:58:15; Search time 46.08 Seconds (without alignments) 5189.123 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                       /*tag= d
/note= "base
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /*tag=
    note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1271
  "base 1255 is
                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94065609 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 T34991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUMMARIES
                                                                                                                                                                                                                                                                                                                                         is
                                                                                żs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mode1
                                                                                                                                                                   ż
                                                                                                                                                                                                                                                    İs
                                                                                                                                                                                                                                                                                                                                     given
  given
                                                                                                                                                                                                                                                  given
                                                                                given
                                                                                                                                                                   given
as
                                                                                as
                                                                                                                                                                   as
                                                                                                                                                                                                                                                    as
=
                                                                                ٧
                                                                                                                                                                 =
                                                                                                                                                                                                                                                  н
                                                                                                                                                                                                                                                                                                                                     in
'n
                                                                                ij
                                                                                                                                                                   'n
                                                                                                                                                                                                                                                    5
the
                                                                                the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Vascular IBP-like
                                                        밁
                                                                                           Qy
                                                                                                                                                                            Š
                                                                                                                                     멍
                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ω
```

```
Human vascular insulin-like growth factor binding protein-like growth factor, and its nucleic acid sequence and (ant)agonists of growth factor, and its nucleic acid sequence and (ant)agonists of the sequence of acid implant fixation, and it succle wasting diseases or acid implant fixation, or limit excess connective tissue prodn. during wound healing. To relate the sequence of the sequence of the sequence of the sequence and control of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the sequence of the se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 1270; Conser
                           421
                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (HUMA-) HUMAN GENOME SCI
Hastings GA, Rosen CA;
WPI; 96-287176/29.
P-PSDB; R98994.
                                                                                                    361
                                                                                                                                         301
                                                                                                                                                                            301
                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-DEC-1994; U14388.
09-DEC-1994; WO-U14388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO9617931-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ᆫ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             щ
TGTCCCTACGGCACCTTCGGGATGGATTGCAGAGAGACCTGCAACTGCCAGTCAGGCATC
                                                                            TGTCCCTACGGCACCTTCGGGATGGATTGCAAGAGAGACCTGCAACTGCGAGTCAGGCATC
                                                                                                                               AGGTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGAGTTTGGTATCTGCAAAGAC
                                                                                                                                                   AGGTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGAGTTTGGTATCTGCAAAGAC
                                                                                                                                                                                                           GGAGAAACTTGCTACCGCACAGTCTCAGGCATGGATGGCATGAAGTGTGGCCCGGGGCTG
                                                                                                                                                                                                                             GGAGAAACTTGCTACCGCACAGTCTCAGGCATGGATGGCATGAAGTGTAGGCCCGGGGCTG
                                                                                                                                                                                                                                                                                  CGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCTGCCGAGTGTGCGGTGCAGGGCGG
                                                                                                                                                                                                                                                                                                                                                             CTGCTTCCCACCAGCAAAGACCACGACTGGAGAGCCGAGCCGGAGCAGCTGGGGAAACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGCTTCCCACCAGCAAAGACCACGACTGGAGAGGCCGGAGCGGGGGCGGGAGACATG
                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         specification"
1265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "base 1259 specification" 1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note- "base 1265 is specification"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  specification'
1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /*tag= j
/note= "base
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1220;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     given
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                given
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          given
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ЗS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1271;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŗ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                             300
                                                                                            420
                                                                                                                                                                      360
                   480
                                                        420
                                                                                                                                 360
                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
```

0

δÃ В

멼

```
1261
                             1201
                                          1201
 1261
                                                       1141
                                                                    1141
                                                                                  1081
                                                                                                1081
                                                                                                              1021
                                                                                                                           1021
                                                                                                                                     961
                                                                                                                                                      961
                                                                                                                                                                   901
                                                                                                                                                                                 901
                                                                                                                                                                                              841
                                                                                                                                                                                                            841
                                                                                                                                                                                                                         781
                                                                                                                                                                                                                                      781
                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                661
                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                            421
       NTCTNAAGGAC 1271
                       NTCTNAAGGAC 1271
                                                                                                        CATCCATATGACTGAACACTTGTATGTGTTTGTTAAATATTCGAATGCATGTAGATTTGT 840
                                                                                                                                                                                                                                                                         CACACAGCCAACATTTTAGGAACTTTCTAGATTATAGGATAAGGACATGTAATTTTTGAA 720
                                                                                                                                                                                         GACCAAATGTGATGCATGGTGGATCCAGAAAAACAAAAAGTAGGATACTTACAATCCATAA 780
                                                                                                                                                                                                                                                                                                      AATCCACGCTGATCCCGGCTGTGATTTCTGAGAGAAGGCTCTATTTTCGTGAYTGTTCAA 660
                                                                                                                                                                                                                                                                                                                                GTGAGAGAAGAAGTTGTGAAAGAGAATGCTGCCGGGTCTCCCGTAATGAGGAAATGGTTA 600
                                                                                                                                                                                                                                                                                                                                                           TCTTCCAACAGATTTGTTTCTCTCACGGAGCATGACATGGCATCTGGAGATGGCAATATT 540
                                                                                                                                                                                                                                                                                                                                                                                       TGTGACAGGGGGACGGGAAAATGCCCTGAAATTCCCCCTTCTTCCAATATTCAGTAACCAAG 480
                                     1260
```

Search completed: May Job time: 945 sec 3, 1999, 17:14:00

용 Ş 밁 δÃ В δĀ ₽ Ş 뮻 δÃ 밁 Qy 밁 δÃ 밁 δδ 밁 δÃ 밁 δĀ 멍 δÃ 밁 Ωy 밁 δÃ

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Perfect score:
                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        on:
                                          Score
                                 Query
Match Length DB
        16.4
3.8
                                                                                                                                                                                                                                                                                                14:
15:
16:
17:
18:
19:
20:
21:
22:
22:
23:
23:
24:
25:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OLIGO_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-037-460-1
1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   May 3, 1999, 17:42:14 ; Search time 358.71 Seconds (without alignments) 5404.963 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2002476 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGCTTCCCACCAGCAAAGA......GTTNCCTNTNTCTNAAGGAC 1271
                                                                                                                                      em_est14:*
em_est15:*
em_est16:*
em_est17:*
em_est18:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GenCore version 4.5 Copyright (c) 1993 - 1998 Compugen Ltd.
                                                                                                                                                                                                                   em_est11:*
em_est12:*
                                                                                                                                                                                                                                        gb_est13:*
gb_est142:*
gb_est15:*
gb_est15:*
gb_est16:*
gb_est17:*
gb_est18:*
gb_est19:*
gb_est19:*
gb_est21:*
gb_est21:*
gb_est21:*
                                                                                                                                                                                                                                                                                                                                                                                                                   gb_est4:*
gb_est5:*
gb_est6:*
gb_est7:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_est9:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_est7:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_est6:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_est5:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_est1:*
                                                                                                                                                                                                                                                                                                                                                                gb_est12:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_est8:*
                                                                                                                                                                                                                                                                                                                                                                          gb_est11:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gb_est1:*
                                                                                                                                                                                                                                                                                                                                                                                    gb_est10:*
                                                                                                                                                                                                                                                                                                                                                                                               gb_est9:*
                                                                                                                                                                                                                                                                                                                                                                                                          gb_est8:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_est3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb_est2:*
        425
351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      762712212 residues
                                       Ħ
     W46667
AA296697
                                                                       SUMMARIES
                    Description
W46667 zc33e02.rl
AA296697 EST112419
                 용
                                    Ş
                                                            밁
                                                                                Š
                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
W46667
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
```

ALIGNMENTS

```
KEYWORDS
SOURCE
ORGANISM
                                                                                                                        Matches 209;
                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                  872 TAAAAATGCAATTTAGGTAATCTTACATGGAGACAGGTCAACCAAAGAGGGGAGCTAGGCA 931
                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                             y Match
16.4%; Score 209; DB 14;
Local Similarity 100.0%; Pred. No. 6e-93;
hes 209; Conservative 0; Mismatches 0;
TAAAAATGCAATTTAGGTAATCTTACATGGAGACAGGTCAACCAAAGAGGGAGCTAGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       High quality sequence stop: 395.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Wilson RK
WashIngton University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO
Fax: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryotae; mitochondrial eukaryotas; Metazoa; Chordata; Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 425)
Hillier_L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M., Parsons,J., Rifkin,L., Rohlfing,T., Soares,M., Tan,F., Trevaskis,E., Waterston,R., Williamson,A., Wohldmann,P. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The WashU-Merck EST Project Unpublished (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g1331295
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 W46667 425 bp mRNA EST 11-OCT-1996
Cc33e02.r1 Soares senescent fibroblasts NbHSF Homo sapiens cDNA
clone_324122 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human.
                                                                                                                                                                                                       144
                                                                                                                                                                                                                 .>425
50 c
                                                                                                                                                                                                  102 g
                                                                                                                                                                                                126 t
                                                                                                                0,
                                                                                                                                        Length 425;
                                                                                                                                                                                             3 others
                                                                                                             Indels
                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Marra, M.,
                                                                                                        Gaps
                                                                                                           0
```

Š

932 AAGCTGAAGACCGCAGTGAGTCAAATTAGTTCTTTGACTTTCamm

0

```
JOURNAL
MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
AA296697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION NID
     mRNA
BASE COUNT
                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         992 ATATGGAATGAAGACTTAAGAGCAGGAGA 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 He,W.W., Hu,J.S., Greene,J.M., Gruber,J., Hudson,P., Kim,A.K., Kozak,D.L., Kunsch,C., Hungjun,J., Li.H., Meissner,P.S., Olsen,H., Raymond,L., Wei,Y.F., Wing,J., Xu,C., Yu,G.L., Ruben,S.M., Dillion,P.J., Fannon,M.R., Rosen,C.A., Haseltine,W.A., Fields,C., Fraser,C.M. and Venter,J.C.

Initial assessment of human gene diversity and expression patterns based upon 83 million nucleotides of cDNA sequence Nature 377 (6547 Suppl), 3-174 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Adams, M.D., Kerlavage, A.R., Fleischmann, R.D., Fuldner, R.A., Bult, C.J., Lee, N.H., Kirkness, E.F., Weinstock, K.G., Gocayne, J.D., White, O., Sutton, G., Blake, J.A., Brandon, R.C., Man-Wai, C., White, O., Sutton, G., Blake, J.A., Brandon, R.C., Man-Wai, C., Fine, L.D., Flatzyton, R.A., Cline, T.R., Cotton, M.D., Earle-Hughes, J., Fine, L.D., Flizgerald, L.M., Fitzhugh, W.M., Fritchman, J.L., Geoghagen, N.S., Glodek, A., Gnehm, C.L., Hanna, M.C., Hachlon, E., Hinkle, P.S.Jr., Kelley, J.M., Kelley, J.C., Liu, L.-I., Marmaros, S.M., Merrick, J.M., Kelley, J.M., Kelley, J.C., Liu, L.-I., Marmaros, S.M., Merrick, J.M., Morence, R., Small, K.V., Spriggs, T.A., Utterback, T.R., Weidman, J.F., Li, Y., Small, K.V., Spriggs, T.A., Utterback, T.R., Weidman, J.F., Li, Y., Bednarik, D.P., Cao, L., Cepeda, M.A., Coleman, T.A., Collins, E.J., Blinke, D., Feng, D., Ferrie, A., Fischer, C., Hastings, G.A., He, W. W. H., T.S., Greene, T.M., Griber, T., Hudson, D., Kriba, K.
                                                                                                                                                                                                                                                                                                                                                               Email: arkerlav@tigr.org
For clone availability, additional sequence and expression
information related to this EST, please check the TIGR Human Gene
Index (http://www.tigr.org/tdb/hgi/hgi.html)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Other_ESTs: THC154673
Contact: Kerlavage, AR
Bioinformatics
The Institute for Genomic Research
9712 Medical Center Drive, Rockville, MD 20850 USA
Tel: 3018699056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA296697 351 bp mRNA EST 18-APR-1997 EST112419 Aorta endothelial cells, TNF alpha-treated Homo sapiens cDNA 5' end similar to endothelial cell-specific secretory
                                                                                                                                                                                                                                                                                                                                                   Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              molecule, mRNA sequence. AA296697 g1949189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
Eukaryotae; r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Fax: 3018699423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 351)
                                                                                                                                                                                                                                                                                                                                                   primer: M13 Reverse.
     118
     ø
                                                                                                                                            note="Organ: aorta; Vector: pBluescript SK-; Site_1:
ECORI; Site_2: XhoI"
/db_xref="ATCC (inhost):115698"
/db_xref="taxon:9606"
/dev_stage="adult"
<1. .>351
57 c 72 g
                                                                                   /clone_lib="Aorta endothelial cells,
/cell_type="endothelial cell"
                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
     102 t
  2 others
                                                                                                                 TNF alpha-treated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
```

Query Match Best Local Similarity

3.8%; 100.0%;

Score 48; Pred. No.

DB 17; 2e-13;

Length 351;

Search completed: May 3, 1999, 17:53:24 Job time: 670 sec

GenCore version 4.5 Copyright (c) 1993 - 1998 Compugen Ltd.

OM protein - protein search, using sw model

May 3, 1999, 16:05:31; Search time 12.08 Seconds (without alignments) 408.826 Million cell updates/sec

Title: Perfect score: Sequence: Scoring table: OLIGO

74019 seqs, 26840295 residues

US-09-037-460-2 184 1 MKSVLLLTTLLVPAHLVAAW.....EVVKENAAGSPVMRKWLNPR 184

SwissProt_36:*

Database : Searched:

Word = 30

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Query Score Match Length DB ID

Result No. S

Description

no matches

ALIGNMENTS

Search completed: May 3, 1999, 16:57:31 Job time: 3120 sec

THIS PAGE BLANK (USPTO)

```
Result Query
No. Score Match Length DB ID
                                                                                                                                                                                                                                                                                                                                    Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                           Database :
                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                 Scoring table: OLIGO
                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                    Run on:
                                                                                         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                     PIR_58:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                           116738 seqs, 37460341 residues
                                                                                                                                                                                                                                                                                                           US-09-037-460-2
184
1 MKSVLLLTTLLVPAHLVAAW.....EVVKENAAGSPVMRKWLNPR 184
                                                                                                                                                                                                                                                                                                                                                                            May 3, 1999, 20:41:34; Search time 16.01 Seconds (without alignments) 430.525 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 4.5
Copyright (c) 1993 - 1998 Compugen Ltd.
                                                                       SUMMARIES
                                                                                                                                                                                                                                                             word = 30
Description
```

no matches

ALIGNMENTS

Search completed: May 3, 1999, 21:34:32 Job time: 3178 sec

THIS PAGE BLANK (USPTO)

OM protein -

protein search, using sw model

3, 1999, 17:54:24; Search time 47.06 Seconds (without alignments)
17:585 Million cell updates/sec

GenCore version 4.5 Copyright (c) 1993 - 1998 Comp

Compugen Ltd

on:

```
o18003 caenorhabdi
o75331 homo sapien
P94354 bacillus su
Q88593 theiler mur
Q88593 theiler mur
Q88593 theiler mur
O38024 potato viru
P93694 volvox cart
O44335 lumbricus t
Q94248 caenorhabdi
P89137 sinian hemo
O14522 homo sapien
Q20876 caenorhabdi
O52666 escherichia
O23347 arabidopsis
Q98965 naja naja
Q2989672 vibrio chol
Q23311 caenorhabdi
Q87620 sinian immu
O44118 drosophila
O45142 caenorhabdi
Q87620 sinian immu
O44118 drosophila
O45942 caenorhabdi
O45942 caenorhabdi
O45942 caenorhabdi
O45942 caenorhabdi
O45943 plasmodium
Q90230 ambystoma m
O77184 plasmodium
Q94573 haemonchus
Q94573 haemonchus
Q94573 haemonchus
Q66372 hepatitis c
                                                                                                                                                                                                                                                                                 Q15330 homo sapien
P97682 rattus norv
O41072 paramecium
                                                                                                                                                                                                                                                                                         닭
                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 15
                                                                                              P97682; PRELIMINARY;
P97682;
01-MAY-1997 (TREMBLREL. 0
01-MAY-1997 (TREMBLREL. C
01-MAY-1997 (TREMBLREL. C
SEQUENCE FROM N.A.
STRAIN-SPRAGUE DAWLEY; TISSUE-PINEAL GLAND;
WANG X., BROWNSTEIN M.J., YOUNG W.S.;
SUBMITTED (DEC-1996) TO EMBL/GENBANK/DDBJ DATA BANKS
                                              RATTUS NORVEGICUS (RAT).
EUKARYOTA; METAROA; CHORDATA; VERTEBRATA; MAMMALIA;
EUKARYOTA; MIRIDAE; MURINAE; RATTUS.
                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDLINE; 96355375.

LASSALLE P.M., MOLET S., JANIN A., VANDER-HEYDEN J.E., TAVERNIER J., FIERS W., DEVOS R.E., TONNEL A.E.B.;

"ESM-1 is a novel human endothelial cell-specific molecule expressed in lung and regulated by cytokines.";

J. BIOL. CHEM. 271:20458-20464(1996).

EMBL; X89426; E189266; -.

EFAM; PF00219; IGFBP; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                       Q15330 PRELIMINARY; PRT; 184 AA.
Q15330;
Q1-NOV-1996 (TREMBLREL. 01, CREATED)
01-NOV-1996 (TREMBLREL. 01, LAST SEQUENCE UPDATE)
01-NOV-1998 (TREMBLREL. 08, LAST SEQUENCE UPDATE)
ESM-1998 (TREMBLREL. 08, LAST ANNOTATION UPDATE)
ESM-1 SECRETORY PROTEIN PRECURSOR.
HOMO SAPIENS (HUMAN).
EUKARYOTA, METAZOA, CHORDATA; VERTEBRATA; MAMMALIA; EUTHERIA; PRIMATES;
                                                                                                                                                                                                                                                                                                    SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                55
                                                                                                                                                                                           1 RVCAAGRGETCYRTV
|||]||||||||
55 RVCAAGRGETCYRTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           l Similarity
15; Conserv
                                                                                                                                                                                                                                                                                         184 AA;
                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           184 E
; 20095 MW;
                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                15
                                                                                                                                                                                              69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         151
387
388
122
395
157
728
367
293
301
62
62
                                                                                                  3,03,0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11
9
10
10
10
10
                                                                                            CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        043603
P96847
2 Q91521
3 Q91521
5 Q91526
018506
018506
022405
022205
087716
087716
087716
073859
2 Q73859
2 Q73859
                                                                                                                                                                                                                                                                                      POTENTIAL.
ESM-1 SECRETORY PROTEIN
; 08D109DF CRC32;
                                                                                                                                                                                                                                 Score 78; DB 2;
Pred. No. 5.8e-06;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ALIGNMENTS
                                                                                                                                        184
                                                                                                                                       Ä
                                                                                                                                                                                                                                                      Length 184;
                                                                                                                                                                                                                                  Indels
                                                              EUTHERIA; RODENTIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 012669 colobus mon 043603 homo sapien P96847 mycobacteri Q91521 vipera ammo 064166 rattus norv 018506 strongyloid 058493 pyrococcus 04007 mus musculu 022205 arabidopsis 087716 caulobacter 061662 mus musculu 048399 klebsiella 073855 naja sputat 073856 naja sputat 073859 naja sputat 073859 naja sputat
                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                0
```

Result No.

Match Query

Length

DB

Description

is

. No. is the greater to is derived

the number of results predicted by chance to have a r than or equal to the score of the result being printed, ed by analysis of the total score distribution.

SUMMARIES

10: 11: 12: 13: 14:

sp_virus:*
sp_vertebrate:*
sp_unclassified:*

sp_bacteria:* sp_phage: * sp_organelle: * sp_mhc:*

sp_rodent:*

? 098965 05672 023311 087620 044118 045842 0045842 077184 2 090230 077183 097183 097183 097183 097183

100.0 53.2

488 208 1127 179 472 137 1420 1040 82

015380 041072 041072 018003 0718003 07354 088593 088593 098593 0944335 0944335 0944335 0944335 0944335 0944335 0944335 0944335 0944335

Database : Searched: Scoring table: Sequence: Perfect score: Title:

SPTREMBL_8:*

55169189 residues

sp_invertebrate: * sp_human:* sp_fungi:*

PAM150 180763 seqs,

US-09-037-460-2_COPY_55_69 78

RVCAAGRGETCYRTV 15

```
RESULT
018003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACTOR OF SEQUENCE FACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                  O18003;
O18003;
O1-JAN-1998
O1-JAN-1998
O1-NOV-1998
WILSON R., AINSCOUGH R., ANDERSON K., BAYNES C., BERKS M., BONFIELD J.,
BURTON J., CONNELL M., COPER J., COOPER J., COULSON A., CRAXTON M.,
DEAR S., DU Z., DURBIN R., FAVELLO A., FULTON L., GARDNER A., GREEN P.,
HAWKINS T., HILLIER L., JIER M., JOHNSTON L., JONES M., KERSHAW J.,
KIRSTEN J., LAISTER N., LATREILLE P., LIGHTNING J., LLOYD C.,
MCMURRAY A., MORTIMORE B., O'CALLAGHAN M., PARSONS J., PERCY C.,
RIFKEN L., ROOPRA A., SAUNDERS D., SHOWNKEEN R., SMALDON N., SMITH A.,
SONNHAMMER E., STADEN R., SULSTON J., THIERRY-MIEG J., THOMAS K.,
VAUDIN M., VAUGHAN K., WATERSTON R., WATSON A., WEINSTOCK L.,
WILKINSON-SPROAT J., WOHLDMAN P.;
"2.2 Mb of contiguous nucleotide sequence from chromosome III of C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           041072
041072;
01-JAN-1998
01-JAN-1998
01-NOV-1998
                                                                                                                                                                                                                             SEQUENCE FROM N.A. MEDLINE; 94150718.
                                                                                                                                                                                                                                                                                                                                                                CAENORHABDITIS ELEGANS.
EUKARYOTA; METAZOA; NEMAT
RHABDITINA; RHABDITOIDEA;
                                                                                                                                                                                                                                                                                         SUBMITTED
                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PARAMECIUM BURSARIA CHLORELLA VIRUS 1
VIRUSES; DSDNA VIRUSES, NO RNA STAGE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A590L PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; U80818; C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 RVCAAGRGETCYRTV 15 : | | | | | | | | | | | | |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RVCAAGRGETCYRTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HVCSC-RGDICYRNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QVCAAGPGETCYRTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity
13; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity 46.7; Conservative
                                                                                                                                                                                                                                                                                       (JAN-1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                              (TREMBLREL.)
(TREMBLREL.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (TREMBLREL.)
(TREMBLREL.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                               N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          G1750198; -.
4 AA; 20075 MW;
                                                                                                                                                                                                                                                                                                                                                                                   NEMATODA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             53.2%;
                                                                                                                                                                                                                                                                                       ō
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        84.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             69
                                                                                                                                                                                                                                                                                                                                                                                                                                                08,05,
                                                                                                                                                                                                                                                                                 EMBL/GENBANK/DDBJ DATA BANKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         80,05
                                                                                                                                                                                                                                                                                                                                                            )DA; SECERNENTEA; RHABDITIA; RHABDITIDA; RHABDITIDA; PELODERINAE; CAENORHABDITIS
                                                                                                                                                                                                                                                                                                                                                                                                                                           CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 41.5; D
Pred. No. 10;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C2AB370D CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3457564C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rISH G.F., ROCK D. at the right end
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (PBCV-1).
PHYCODNAVIRIDAE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1.
0.00057;
1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of the 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PHYCODNAVIRUS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  313;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N ETTEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          J.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

'n.

```
밁
                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SQ DR RE
                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
Matches
SEQUENCE FROM N.A.
STRAIN-BGSC 1A1;
MEDLINE; 97124196.
MEDLINE; 97124196.
YOSHIDA K., SHINDO K., S
MIWA Y., FUJITA Y.;
"Sequencing of a 65 kb r
containing the lic and c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   elegans.";
NATURE 368:32-38(1994).
EMBL; Z92809; E1186508; -.
PROSITE; PS00524; SOMATOMEDIN_B; 1
PFAM; PF00090; tsp_1; 1.
SEQUENCE 440 AA; 50400 MW; 04D.
                                                                        BACILLUS S
BACTERIA;
BACILLUS.
                                                                                                                  P94354 PRELIMINARY;
P94354;
01-MAY-1997 (TREMBLREL 03,
01-MAY-1997 (TREMBLREL 03,
01-NOV-1998 (TREMBLREL 08,
                                                                                                                                                                                                                                                                                                                                                                                                                                 075331
075331;
01-NOV-1998
01-NOV-1998
01-NOV-1998
CATHEPSIN Z
                                                                                                            HOMOLOGOUS
                                                                                                                                                                                                                                                                                                                                                                                        CTS2.
HOMO SAPIENS (HUMAN).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA;
CATARRHINI; HOMINIDAE; HOMO.
                                                                                                                                                                                                                                                                                         CHAIN
                                                                                                                                                                                                                                                                                                                 "Cathepsin Z, a novel human cysteine propeptide domain and a unique chromo: J. BIOL. CHEM. 273:16816-16823(1998).
                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                 SIGNAL
                                                                                                                                                                                                                                                                                                          SIGNAL.
                                                                                                                                                                                                                                                                                                                                                   SANTAMARIA I., VELASCO G.,
                                                                                                                                                                                                                                                                                                                                                              MEDLINE; 98307916.
                                                                                                                                                                                                                                                                                                                                                                       TISSUE=PROSTATE;
                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                   Local Similarity 66. hes 6; Conservative
                                                                                                                                                                                                  29
                                                                                                                                                                                                                   7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 RVCAAGRGETC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Match
                                                                                                                                                                                                            RGETCYRTV 15
                                                                                                                                                                                                  RGQTCYRPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RLCCAGRNNTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
7; Conserv
                                                                                SUBTILIS.; FIRMICUTES;
                                                                                                           TO MANY
                                                                                                                                                                                                                                                                               1
62
303 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                 (TREMBLREL.)
(TREMBLREL.)
(TREMBLREL.)
PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         35
                                                                                                                                                                                                                                                                              20 F
303 C
33882 MW;
                                                                                                           TRANSCRIPTIONAL
                                                                                                                                                                                                                                            51.3%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   52.6%;
                                                                              BACILLUS/CLOSTRIDIUM GROUP;
region of cel loci,
                            SANO
                                                                                                                                                                                                                                                                                                                                                                                                                                          8,88
                           н.,
                                                                                                                                                                                                                                                                                                                                                  PENDAS A.M., FUEYO
                                                                                                                   CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                cysteine proteinase with a que chromosomal location.";
                                                                                                                                                                                                                                                                                                                                                                                                                                        CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                  Score 40; DB Pred. No. 18; 2; Mismatches
                                                                                                                                                                                                                                    ?
                                                                                                                                                                                                                                                                            POTENTIAL.
CATHEPSIN Z.
7485A4BA CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 41;
Pred. No.
                            SEKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      04D449FB CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ore 41; DB
ed. No. 16;
Mismatches
the
and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>,</u>
                                                                                                          ACTIVATOR PROTEINS
                         :
:
Bacillus creation
                                                                                                                                                      218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             303
                                                                                                                                                                                                                                           DB
18;
                          FUJIMURA
                                                                                                                                                      ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                       MAMMALIA;
                                                                                                                                                                                                                                                    2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
subtilis of a 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ņ
                                                                                                                                                                                                                                                    Length 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 440;
                                                                               BACILLACEAE;
                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                  LOPEZ-OTIN
                                                                                                                                                                                                                                                                                                                                                                                                       EUTHERIA;
                                                                                                                                                                                                                                                                                                                                          a short
kb cont
                          YANAI N.,
contig
                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                  <u>က</u>
()
                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

```
RESULT 088593
ID 088593
ID 07 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
RP 08
OC VII
RV IE
                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RA RUNST F. COUSAGNARA N., MOSZER I., ALBERTINI A.M., ALLONI G.,
RA AZEVEDO V., BERTERO M.G., BESSIERES P., BOLOTIN A., BORCHERT S.,
RA AZEVEDO V., BERTERO M.G., BESSIERES P., BOLOTIN A., BORCHERT S.,
RA AZEVEDO V., BERTERO M.G., BESSIERES P., BOLOTIN A., BORCHERT S.,
RA AZEVEDO V., BERTERO M.G., BESSIERES P., BOLOTIN A., BORCHERT S.,
RA BOUILLET S., BRUSCHI C.V., CALDWELL B., CAPUANO V., CARTER N.M.,
RA CHOI S.K., CODANI J.J., CONNERTON I.F., CUMMINGS N.J., DANIEL R.A.,
RA CHOI S.K., CODANI J.J., CONNERTON I.F., CUMMINGS N.J., DANIEL R.A.,
RA CHOI S.K., CODANI J.J., CONNERTON I.F., CUMMINGS N.J., DANIEL R.A.,
RA CHOI S.K., CODANI Y.J., CONNERTON I.F., CUMMINGS N.J., DANIEL R.A.,
RA CHOI S.K., CODANI J.J., CONNERTON I.F., CUMMINGS N.J., DANIEL R.A.,
RA CHOI S.K., CODANI J.J., CONNERTON I.F., CUMMINGS N.J., DANIEL R.A.,
RA CHOI S.K., CODANI J.J., CONNERTON I.F., CUMMINGS N.J., DANIEL R.A.,
RA CHOI S.K., CODANI S., GOLIGHTLY E.J., GRANDI G., GUISEPDI G.,
RA GIASER P., GOFFEAU A., GOLIGHTLY E.J., GRANDI G., GHIMM S.Y.,
RA GIASER P., CONINCSTEIN G., KROGH S.J., KRANDI G., GUISEPDI G.,
RA KARAMATA D., KASAHARA Y., KLAERR-BLANCUBAD M., KURITA K., LAPIDUS A.,
RA MASUDA S., MAUEL C., MEDIGUE C., MEDINA N., MELLADO R.P., MIZUNO M.,
RA MASUDA S., MAUEL C., MEDIGUE C., MEDINA N., MELLADO R.P., MIZUNO M.,
RA COCHE B., ROSE M., SADALE Y., SATO D., O'REILLY M., OGAWA K.,
RA RAPOPORT G., REY M., REYNOLDS S., RIEGER M., RIVOLTA C., ROCHA E.,
RA RAPOROLIK S., SCLOB B., SCRIGGCHI J., SCANLAN E., SCHLEILE B.,
RA SCHROEFER N., SCOFFONE F., SEKIGGCHI J., SCANLAN E., SCHLEILE B.,
RA SCHROEFER P., SHIN B.S., SOLDO B., SOROKIN A., TAMAKOSHI A., TAMAGI T.,
RA TERSTRA P., TOGNONI A., TOSATO V., UCHIYAMA S., VANDENBOL M.,
RA VANNIER F., VASSAROTI A., VIARI A., WAMBUTT R., WEDLER E., WEDLER H.,
RA MASUMOTO K., YATA K., YOSHIDA K., YOSHIKAMA H.F., ZUMSTEIN E.,
RA YASUMOTO K., YATA K., YOSHIDA K., YOSHIKAMA H.F., ZUMSTEIN E.,
                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                 01-NOV-1996
01-NOV-1996
                                                                                                                                                                        Q88593;
Q88593;
SEQUENCE FROM N.A. MEDLINE: 87061197
                                                            THEILER MÜRINE ENCEPHALOMYELITIS VIRUS.
VIRUSES; SSRNA POSITIVE-STRAND VIRUSES,
                                                     CARDIOVIRUS
                                                                                                      PROTEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                        PFAM; PF00072; response_reg; PFAM; PF00196; GerE; 1.
                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; Z99123; E1186390; -.
PROSITE: PS00622; HTH_LUXR_FAMILY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; D83026; D1012380; EMBL; Z99123; E1186390;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KUNST F., OGASAWARA N., SUBMITTED (NOV-1997) TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KUNST F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NATURE 390:249-256(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "The complete genome
                                                                                                                                                                                                                                                                    4 AAGRGETCYRTV 15
||:|||::|||
|21 AAARGEAIFRTV 132
                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE; 98044033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COVERING the
                                                                                                                                                                                                                                                                                                                                     Similarity 66.7
8; Conservative
                                                                                                      (FRAGMENT)
                                                                                                               (TREMBLREL.
(TREMBLREL.
                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                              218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gnt-sacxy region.";
142:3113-3123(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                            A,
                                                                                                                                                                                                                                                                                                                                                     50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                         24245 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence of the gram-positive bacterium Bacillus
                                                                                                                 801,
01,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YOSHIKAWA H., DANCHIN A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL/GENBANK/DDBJ DATA BANKS.
                                                                                                      CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                Score 39; DB Pred. No. 20; 3; Mismatches
                                                                                                                                                                                                                                                                                                                                     ω
                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                     1D8B7BD8 CRC32;
                                                                                                                                                                                 139
                                                                                                                                                                                                                                                                                                                                              DB
20;
                                               NO DNA STAGE; PICORNAVIRIDAE;
                                                                                                                                                                               æ
                                                                                                                                                                                                                                                                                                                                                                  9;
                                                                                                                                                                                                                                                                                                                                ۲.
                                                                                                                                                                                                                                                                                                                                                              Length 218;
                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                           0
```

```
밁
                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                            뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local (
                                                                                                                                                                                                                                                                             SUBMITTED (SEP-1997) TO EMBL/GI
EMBL; AF023877; G2547199; -.
HYPOTHETICAL PROTEIN.
SEQUENCE 92 AA; 10310 ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 5; Conser
                  GODL K., HALLMANN A., RAPPEL A., SUMPER M.;
"Pherophorins: a family of extracellular matrix glycoproteins from Volvox structurally related to the sex-inducing pheromone.";
PLANTA 196:781-787(1995).
                                                                                                                                                                                                                                                                                                                                    O38024;
O3-024, 1998 (TREMBLREL. 05, CREATED)
O1-JAN-1998 (TREMBLREL. 05, LAST SEQUENCE UPDATE)
O1-JAN-1998 (TREMBLREL. 07, LAST ANNOTATION UPDATE)
HYPOTHETICAL 10.3 KD PROTEIN.
POTATO VIRUS M (PVM).
VIRUSES; SSRNA POSITIVE-STRAND VIRUSES, NO DNA STAG
    SEQUENCE
              NON_TER
                                                                                                                                                                P93694
                                                                                                                                                                                                                                                                                                                   STRAIN-IDAHO;
CAVILEER T.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROTEASE,
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                 038024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OZDEN S., TANGY F., CHAMORRO M., BRAHIC M.;
"Theiler's virus genome is closely related to that of encephalomyocarditis virus, the prototype cardiovirus.";
J. VIROL. 60:1163-1165(1986).
                                                                                                                                                                                                       50 RAIAAGRCHRCYR
                                                                                                                                                                                                                                          Local Similarity hes 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        J. VÎROL. 60:1163-1165
EMBL; M14703; E12025;
                                                                                                                                                                                                                       1 RVCAAGRGETCYR
                                                                                                                                                                                 φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                         38 PARNDTCYR 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5 AGRGETCYR 13
    488
                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  139 AA;
   ĄĄ;
                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                        62
51465 MW;
                                                                                                                                                                                                                         13
                                                                                                                                                                                                                                                 47.48;
61.58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1
15070 MW;
                                                                                                                                                                                                                                                                                                       NI D.L., BERGER P.H.;
TO EMBL/GENBANK/DDBJ DATA BANKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 48.7%;
                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                       Score 37;
                                                                                                                                                                                                                                               Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
71A5542F CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 38;
Pred. No.
                                                                                                                                                                                                                                                                              9C955295 CRC32;
                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7309B868 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                            488
                                                                                                                                                                                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
20;
                                                                                                                                                                                                                                                                                                                                               NO DNA STAGE; CARLAVIRUS
                                                                                                                                                            Ą
                                                                                                                                                                                                                                                      11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŗ
                                                                                                                                                                                                                                                     Length 92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 139;
                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

Query Match

50.0%;

Score

39;

BB

8

Length 488

```
RESULT
Q94248
ID 294248
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
AC Q94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q94248
Q94248;
Q1-FEB-1997
Q1-FEB-1997
Q1-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          044335;
044335;
01-JUN-1998
01-JUN-1998
01-JUN-1998
                                                                                                                                                                                                                                                                                        WILSON R., AINSCOUGH R., ANDERSON K., BAYNES C., BERKS M., BONFIELD J.,
BURTON J., CONNELL M., COPSEY T., COOPER J., COUJSON A., CRAXTON M.,
DEAR S., DU Z., DURBIN R., FAVELLO A., FULTON L., GARDNER A., GREEN P.,
HAWKINS T., HILLIER L., JIER M., JOHNSTON L., JONES M., KERSHAW J.,
KIRSTEN J., LAISTER N., LATTELILLE P., LIGHTWING J., LLOYD C.,
MCMURRAY A., MORTHONER B., O'CALLAGHAN M., PARSONS J., PERCY C.,
RIFKEN L., ROOPRA A., SAUNDERS D., SHOWNKEEN R., SMALDON N., SMITH A.,
SONNHAMMER E., STADEN R., SULSTON J., THIERRY-MIEG J., THOMAS K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-FEB-1997 (TREMBLREL. 02, CREATED)
01-FEB-1997 (TREMBLREL. 02, LAST SEQUENCE UPDATE)
01-NOY-1998 (TREMBLREL. 08, LAST ANNOTATION UPDATE)
CODED FOR BY C. ELEGANS CDNA YK6G11.3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
WANG D., LIU W., HALPERN M.,
J. BIOL. CHEM. 0.0-0(1997).
EMBL; AF019234; G2738885; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-JUN-1998 (TREMBLREL. 06, CREATED)
01-JUN-1998 (TREMBLREL. 06, LAST SEQUENCE UPDATE)
01-JUN-1998 (TREMBLREL. 06, LAST ANNOTATION UPDATE)
CHEMOATTRACTIVE GLYCOPROTEIN ES20.
                                                                                               SEQUENCE FROM N.A.
STRAIN-BRISTOL N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAENORHABDITIS ELEGANS.
EUKARYOTA; METAZOA; NEMATODA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LUMBRICUS TERRESTRIS (COMMON EARTHWORM).
EUKARYOTA; METAZOA; ANNELIDA; CLITELLATA; OLIGOCHAETA; HAPLOTAXIDA;
LUMBRICINA; LUMBRICIDAE; LUMBRICUS.
  SEQUENCE FROM N.A
                                                  SUBMITTED (SEP-1996)
                                                                                                                                                                                                                                                 VAUDIN M., VAUGHAN K., WATERSTON R., WATSON A., WILKINSON-SPROAT J., WOHLDMAN P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-BRISTOL N2;
MEDLINE; 94150718.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                            NATURE 368:32-38(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             •
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        458 VCKGGIGEQCYVSI 471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity 36.8 nes 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N
                                                                                                                                                                                                                            2 Mb of contiguous nucleotide sequence from chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 VCAAG-----RGETCYRTV 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VCPPGFTYLPAGESCYKVI 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VCAAGRGETCYRTV 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity 50.0%; 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         208 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RHABDITOIDEA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22954 MW;
                                                  Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 46.8%;
36.8%;
                                               EMBL/GENBANK/DDBJ DATA BANKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DDA; SECERNENTEA; RHABDITIA; RHABDITIDA; RHABDITIDAE; PELODERINAE; CAENORHABDITIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 36.5; D
Pred. No. 50;
5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. 39; 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHEN P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5C4365F6 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4.
                                                                                                                                                                                                                                                                              WEINSTOCK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                            III of C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESULT PRESUL
      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SORRERC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 6
                                                                                                                                                                                                                                             01-MAY-1997
01-MAY-1997
01-NOV-1998
NOMURA N.;
SUBMITTED (AUG-1997) TO EMBL/GENBANK/DDBJ
EMBL; AB006521; D1023828; -.
PROSITE; PS00383; TYR_PHOSPHATASE_1; 2.
PFAM; PF00102; Y_phosphatase; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P89137
P89137;
                                                                                                                                                                                   HOMO SAPIENS (HUMAN).
EUKARYOTA; METAZOA; CHORDATA;
CATARRHINI; HOMINIDAE; HOMO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-BRISTOL N2;
WATERSTON R.;
SUBMITTED (AUG-1996) TO EMBL/GEN
EMBL; U67947; G1519650; -.
SEQUENCE 1127 AA; 124650 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN-IVR 42-0/M6941;
STRAIN-IVR 47-00.
MEDLINE; 97361760.
SMITH S.L., WANG X., GODENY E.R
"Sequence of the 3' end of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
STRAIN-LVR 42-0/M6941;
ZENG L., GODENY E.K., 1
VIROLOGY 207:0-0(0).
                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENE 191:205-210(1997).
EMBL; U63121; G1762563;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMIAN HEMORRHAGIC FEVER VIRUS.
VIRUSES; SSRNA POSITIVE-STRAND VIRUSES, NO DNA STAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORF
                                                                                                        OHARA O.,
                                                                                                                           TISSUE=BRAIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          217
                                                                                                                                                                                                                                                                                                                                                                                                              13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25 CSANQTHICFRNI 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 CAAGRGETCYRTV 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6 GRGETCYRTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GKGPVCYRTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 Similarity
4; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
6; Conserv
                                                                                                        NAGASE T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (TREMBLREL.) (TREMBLREL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19655 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        46.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          51.3%;
                                                                                                      ISHIKAWA K., NAKAJIMA D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TO EMBL/GENBANK/DDBJ DATA BANKS 50; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          METHVEN S.L.,
                                                                                                                                                                                                                                                                  . 05, CREATED)
. 05, LAST SEQUENCE UPDATE)
. 08, LAST ANNOTATION UPDATE)
(FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 40; DB pred. No. 52; 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
Pred.
                                                                                                                                                                                                          VERTEBRATA; MAMMALIA; EUTHERIA; PRIMATES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .K.;
e simian hemorrhagic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ED8A5791 CRC32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C6C909EA CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BRINTON M.A.;
                                                                                                                                                                                                                                                                                                                                                                      472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 11;
53;
                                                                                                                                                                                                                                                                                                                                                                      ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                        OHIRA M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 179;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                          SEKI N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

```
RESULT

ID 00876

ID 00876

AC 020

AC
                        RESULT
052666
ID 05:
AC 05:
DT 01:
DT 01:
DT 01:
                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                 052666;
052666;
01-JUN-1998
01-JUN-1998
01-AUG-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN-ERISTOL N2;

WATTERSTON R.;

SUBMITTED (JUN-1995) TO EMBL/GENBANK/DDBJ DATA BANKS.

EMBL; U28942; G861331; -.

SEQUENCE 137 AA; 15158 MW; A239ADFB CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WILSON R., AINSCOUGH R., ANDERSON K., BAYNES C., BERKS M., BONFIELD J., DEAR S., DU Z., DUBBIN R., FAVELLO A., FULTON L., GARDNER A., GREEN P., HAMKINS T., HILLIER L., JIER M., JOHNSTON L., GARDNER A., GREEN P., MCHURRAY A., KOTIMORE B., O'CALLAGHAN M., PARSONS J., PERCY C., SONNHAMMER E., STADEN R., SULSTON J., THIERRY-MIEG J., TLOMAS K., WATERSTON R., WATERSTON R., WATSON A., WATERSTON R., WATSON A., WATERSTON R., WATSON A., WEINSTOCK L., WALKINSON-SPROAT J., WOHLDMAN P.; "2.2 Mb of contiguous nucleotide sequence from chromosome III of C. elegans.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBMITTED (JUN-1995) TO EMBL/GENBANK/DDBJ DATA BANKS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. STRAIN-BRISTOL N2; WILCOX L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NATŪRE 368:32-38(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=BRISTOL N2;
MEDLINE; 94150718.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAENORHABDITIS ELEGANS.
EUKARYOTA; METAACOA; NEMATODA; SECERNENTEA; RHABDITIA; RHABDITIDA;
RHABDITINA; RHABDITOIDEA; RHABDITIDAB; PELODERINAE; CAENORHABDITIS.
                                                                                                                                                                                                                            55 RVCSIRRSFACESSI 69
                                                                                                                                                                                                                                                                                                                     Local Similarity 33...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-NOV-1996 (TREMBLREL 01-NOV-1996 (TREMBLREL 01-NOV-1998 (TREMBLREL COSMID F56D3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q20876;
Q20876;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HYDROLASE.
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                     1 RVCAAGRGETCYRTV 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 RVCAAGRGETCYRTV 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RICHMARPODGYRIV 363
       8 (TREMBLREL. 06,
8 (TREMBLREL. 06,
8 (TREMBLREL. 07,
                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                472 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                           44.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      54092 MW; 039D0105 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                48.78;
40.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    801,
CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                             Score 35; DB 3; Pred. No. 62; 6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 38; DB 2; Pred. No. 55; 3; Mismatches
                                                                                                  1420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          137 AA.
                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                            Length 137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 472;
                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
ν
V
     B
                                                                                                                 SOR RECEIVED
                                                 Query Match
Best Local S
Matches 7
                                                                                                    SEQUENCE FROM N.A.

STRAIN-EC45;
WANG Y.-D., ZHAO S., HILL C.W.;
WANG Y.-D. JEAO S., HILL C.W.;
SUBMITTED (JAN-1998) TO EMBL/GENBANK/DDBJ DATA BANKS.
EMBL; AF044501; G2920634; -
EMBL; AF044501, G2920634; -
EMBL; AF044501, G2920634; -
EMBL; AF044501, G2920634; -
                                                                                                                                                                                                                 CORE PROTEIN.
ESCHERICHIA COLI.
BACTERIA; PROTEOB
364 AGRPESCYR 372
                                                                                                                                                                                                ESCHERICHIA.
                 5 AGRGETCYR 13
                                               Similarity 77.17; Conservative
                                                                                                                                                                                                   PROTEOBACTERIA; GAMMA SUBDIVISION; ENTEROBACTERIACEAE;
                                                          51.38;
77.88;
                                         Score 40; DB;
Pred. No. 63;
1; Mismatches
                                                                 9; Length 1420;
                                            <u>;</u>
                                           Indels
                                        0;
                                       Gaps
                                       0
```

Search completed: May Job time: 645 sec

ω

1999, 17:54:25

THIS PAGE BLANK (USPTO)

J)

naja naja

atra

```
No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-037-460-2_COPY_55_69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RVCAAGRGETCYRTV 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 4.5
Copyright (c) 1993 - 1998 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3, 1999, 16:05:43; Search time 18.06 Seconds (without alignments) 22.293 Million cell upd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26840295
                                                      CX6_NAJAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            H2AL_HUMAN
ALBU_HORSE
YXJL_BACSU
NPAB_LOCMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    residues
                   p80245 naja atra (
p05485 conus magus
p49123 naja atra (
p49124 naja atra (
p49124 naja atra (
p49124 naja atra (
p49124 naja atra (
p49124 naja atra (
p49125 tachypleus
p28686 gailus gallus
p48745 homo sapien
colorer vipera ammo
p11407 vipera ammo
p11407 vipera ammo
p11407 vipera ammo
p11407 vipera ammo
p11407 vipera ammo
p11407 vipera ammo
p11407 naja naja (
p01445 naja naja (
p01445 naja naja (
p01446 naja naja (
p01447 naja naja (
p01447 naja naja (
p01447) naja naja (
p01447) naja naja (
p01447) naja naja (
p01447) naja naja (
p01447) naja naja (
p01447) naja naja (
p01447) naja naja (
p01447) naja naja (
p0144689 arabidopsis
colorer vipera atra (
colorer vipera atra (
colorer vipera ammo
p11214 mus musculu
p43600 saccharomyc
p46689 arabidopsis
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vipera atra (
colorer vi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P98176
P35747
P55184
P10776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           equus cabal
bacillus su
locusta mig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      homo sapien
equus cabal
                 RESULT 2
ALBU_HORSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local s
          PROSITE;
PLASMA; M
COPPER.
SIGNAL
PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE; 96133299.

NAYLOR J.A., BUCK D., GREEN P.M., WILLIAMSO GIANNELLI F.;

HUM. MOL. GENET. 4:1217-1224(1995).

-1- SINILARITY: TO HISTONE H2A.

EMBL; X86012; G976083; -.

EMBL; X86012; G976083; -.

ENOSITE; PS00046; HISTONE_H2A; FALSE_NEG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-JUN-1994 (REL. 201-JUN-1994 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL. 201-FEB-1996 (REL) (REL. 201-FEB-1996 (REL) (REL. 201-FEB-1996 (REL) (REL) (REL. 201-FEB-1996 (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (REL) (R
                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A., AND TISSUE-LIVER;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               EQUUS CABALLUS (HORSE).
EUKARYOTA; METAZOA; CHORDATA;
                                                                                                                                                                                                                                                                                                                                                                                                                                             EUTHERIA; PERISSODACTYLA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SERUM ALBUMIN PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ALBU_HORSE
P35747;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PARL_HUMAN STANDARD; PRT; 115 AA.

P98176;
P98176;
01-OCT-1996 (REL. 34, CREATED)
01-OCT-1996 (REL. 34, LAST SEQUENCE UPDATE)
01-OCT-1996 (REL. 34, LAST ANNOTATION UPDATE)
HYPOTHETICAL 12.7 KD HISTONE H2A RELATED PROTEIN.
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; MAMMALIA;
EUTHERIA; PRIMATES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HYPOTHETICAL PROTEIN.
SEQUENCE 115 AA; 12697 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4 AAGRGETCYRTV 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGRGRTCSRTV
                                                              METAL-BINDING;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity 75.09; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .
5 5
             1
19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           40.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29, CREATED)
29, LAST SEQ
33, LAST ANN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24
        18
24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    51.3%;
75.0%;
                                                        LIPID-BINDING; ALBUMIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GREEN P.M., WILLIAMSON H.,
                                                                                                                                                                                                                                                                                                                                                                                     X-RAY CRYSTALLOGRAPHY (2.7 ANGSTROMS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE UPDATE)
ANNOTATION UPDATE)
BY SIMILARITY
BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERTEBRATA; TETRAPODA; MAMMALIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 40; Pred. No. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CX3B_NAJAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              729A09E6 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 115;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BENTLEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q98960
Q98961
```

0

Gaps

0

Result No.

Score

Match Query

Length

멂

51.3 53.8 445.9 446.2 38.7 442.9 446.2 37.8 482.9 446.2

Database :

SwissProt_36:* 74019 seqs, PAM150

Scoring table: Sequence:

Perfect score:

Run ğ

on:

protein

.

```
RESULT
TATILLE

ACCOMMENT
RESULT
TO THE SULT
TO THE SULT
RESULT
R
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 7
                                   Matches
                                                                                                                   MOD_RES
DNA_BIND
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YXJL_BACSU
P55184;
01-OCT-1996
                                                                                                                                                                                                                                                          EMBL;
                                                                                                                                                                                                                                                                             -!- PIM: PHOSPHORYLATED BY YXJM (PROBABLE).
-!- SIMILARITY: THE N-TERMINAL REGION IS SIMILAR TO THAT OF OTHER REGULATORY COMPONENTS OF SENSORY TRANSDUCTION SYSTEMS.
-!- SIMILARITY: BELONGS TO THE LUXR/UHPA FAMILY OF TRANSCRIPTIONAL
                                                                                                                                                                                                                                                                                                                                                                  SCHROEGEL O., KRISPIN O., ALLMANSBERGER R.;
FEMS MICROBIOL. LETT. 145:341-348(1996).
-I- FUNCTION: PROBABLE MEMBER OF THE TWO-COMPONENT REGULATORY SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                    PROSITE; PS00622; HTH_LUXR_FAMILY; HYPOTHETICAL PROTEIN; SENSORY TRANS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-OCT-1996
01-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DISULFID
DISULFID
DISULFID
                                                                                                                                                                                 TRANSCRIPTION REGULATION;
                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-168;
                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BACILLUS SUBTILIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HYPOTHETICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BACSU
                                                                                                                                                                      MAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROKARYOTA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REPEAT
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     382 KCCAEADPPACYRTV
 4 AAGRGETCYRTV 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 RVCAAGRGETCYRTV 15
                                                                                                                                                                                                                                                                          REGULATORS.
                                                                                                                                                                                                                                                                                                                                                         YXJM/YXJL.
                                                                                                                                                                                                                                                      x99339;
                               Similarity 66. 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 46.7; Conservative
                                                                                                                                                                                                                                    BG11895;
                                                                                                                   218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25
28
221
221
212
27
77
77
77
19
111
114
114
114
119
1223
268
301
330
268
330
445
445
446
484
489
581
                                                                                                                                     58
174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FIRMICUTES; ENDOSPORE-FORMING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (REL. 34, CREATED)
(REL. 34, LAST SEQUENCE UPDATE)
(REL. 35, LAST ANNOTATION UPDATE)
L TRANSCRIPTIONAL REGULATOR IN GALE-PEPT
                                                                                                                                                                                                                                                      E253894;
                                                                                                                   ΑĄ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                 58
193
24259
                                                                                                                                                                                                                                        YXJL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        68598 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     53.8%;
                                                                                                                 MW;
                                                                                                                                                                                 SORY TRANSDUCTION;
DNA-BINDING.
                                              Score 39;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 42; DB Pred. No. 5; 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ω
                                                                                                             RECEIVER DOMAIN.
PHOSPHORYLATION (BY SIMILARITY).
H-T-H MOTIF (POTENTIAL).
; 91CAF541 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COPPER (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SERUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        040EBFB8 CRC32;
                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ALBUMIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  218
                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RODS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ۳.
                                                                                                                                                                                                 PHOSPHORYLATION,
                              1;
                                                              Length 218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AND COCCI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 607;
                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INTERGENIC REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BACILLACEAE
                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
```

```
RESULT 5

CX6_NAJAT

ID CX6_NAJAT

CX6_NAJAT

CX6_NAJAT

AC p80245;

DT 01-FEB-1994 (REL. 28, CREATED)

DT 01-FEB-1994 (REL. 28, LAST SEQUENCE UPDATE)

DT 01-FEB-1995 (REL. 31, LAST ANNOTATION UPDATE)

DT 01-FEB-1995 (REL. 31, LAST ANNOTATION UPDATE)

DT 01-FEB-1995 (REL. 31, LAST ANNOTATION UPDATE)

DT 01-FEB-1995 (REL. 31, LAST ANNOTATION UPDATE)

DE CYTOTOXIN 6 (CARDIOTOXIN 6) (CTX6).

OC LEPIDOSAURIA; SERPENTES.

RP SEQUENCE.

RP SEQUENCE.

RC TISSUE-VENOM;

RA HUNG C.C., WU S.-H., CHIOU S.-H.;

RA HUNG C.C., WU S.-H., CHIOU S.-H.;

RL BICCHEM. MOL. BIOL. INT. 31:1031-1040(1993).

BR HSSP; P01444; 2CRS.

DR PROSITE; PS00272; SNAKE_TOXIN; 1.

RW VENOM; CYTOTOXIN; CARDIOTOXIN; MULTIGENE FAMILY.

FT DISULFID 3 321

DISULFID 42 53

BY SIMILARITY.

FT DISULFID 42 53

BY SIMILARITY.

FT DISULFID 42 53

BY SIMILARITY.

FT DISULFID 54 59

SEQUENCE 60 AA; 6689 MW; 5F6A8F9C CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AID DACCOCCEPT REAR REAR COCCEPT REAR REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR COCCEPT REAR C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NPAB_LOCMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local s
Matches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE.
GIRARDIE J., HUE
INSECT BIOCHEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PEPTIDE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HORMONE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE; 89171328.

GIRARDIE J., GIRARDIE A., HUET J.-C., PERNOLLET J.-C.;

FEBS LETT. 245:4-8(1989).

-!- FUNCTION: NUUROSPARINS ARE MULTIFUNCTIONAL NEUROHORNONES:
-INHIBIT THE EFFECTS OF JUVENILE HORMONE, STIMULATE FLUID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REABSORPTION OF IGULATED RECTA AND INDUCES
HEMOLYMPH LIPID AND TREHALOSE LEVELS.
-1- SUBUNIT: HOMODIMER, DISULFIDE-LINKED.
PIR; A60361; A60361.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-JUL-1989 (REL. 11, CREATED)
01-JUL-1993 (REL. 26, LAST SEQUENCE UPDATE)
01-JUL-1993 (REL. 26, LAST ANNOTATION UPDATE)
NEUROPARSIN A (NPA) (CONTAINS: NEUROPARSIN B
LOCUSTA MIGRATORIA (MIGRATORY LOCUST).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NPAB_LOCMI
P10776;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OF 6-83.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE-NEUROPORA CARDIACA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EUKARYOTA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 RVCAAGRGETC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KVCAKGPGDKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | | : | | | : : | | | AAARGEAIFRTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4Ph
1T: HOMUL
361; A60361.
3; NEUROPEPTIDE.
1 83
6 83
8765 M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       METAZOA; ARTHROPODA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HUET J.C., PERNOLLET J.
EM. 20:659-666(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          54
4
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NEUROPARSIN A.
NEUROPARSIN B.
8E9BE0B8 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INSECTA; ORTHOPTERA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ).5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (NPB)).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AN INCREASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

Query

Match

42

.98

Score

 $\frac{\omega}{\omega}$

5

BB

۲,

Length

60;

8 Ş

12

۳

CXOB_CONMA

STANDARD;

Best Local Matches

Similarity 46.3 6; Conservative

```
P SEQUENCE FROM N.A.

P SEQUENCE FROM GLAND;

(C TISSUE-VENOM GLAND;

RA CHANG L.-S., LIN J., WU P.F.;

RA CHANG L.-S. (SEP-1995) TO EMBL/GENBANK/DDBJ DATA BANKS.

BUBL; Z54229; G1000507; -.

DR EMBL; Z54229; G1000507; -.

DR PROSITE; PS00272; SNAKE_TOXIN; 1.

KW VENOM; CYTOTOXIN; CARDIOTOXIN; MULTIGENE FAMILY; SIGNAL.

KW VENOM; CYTOTOXIN; 21 POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE; 89024586.

GRAY W.R., OLIVERA B.M., CRUZ L.J.;
ANNU. REV. BIOCHEM. 57:665-700(1988).

-i- FUNCTION: OMEGA-CONOTOXINS ACT AT P.
AND BLOCK THE CALCIUM CHANNELS.
PIR; B34115; B34115.

PIR; JH0701; JH0701.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P05485;

01-NOV-1988 (REL. 09, CREATED)

01-NOV-1988 (REL. 09, LAST SEQUENCE UPDA

01-NOV-1988 (REL. 09, LAST ANNOTATION UP

01-NOV-1988 (REL. 09, LAST ANNOTATION UP

OMEGA-CONOTOXIN MYIIB.

CONUS MAGUS (MAGUS CONE).

EUKARYOTA; METAZOA; MOLLUSCA; GASTROPODA
                                                                                                                                                      CX8.NAJAT STANDARD; PRT; 81 AA.
P49123;
01-FEB-1996 (REL. 33, CREATED)
01-FEB-1996 (REL. 33, LAST SEQUENCE UPDATE)
15-JUL-1998 (REL. 36, LAST ANNOTATION UPDATE)
CYTOTOXIN 8 PRECURSOR (CARDIOTOXIN 8) (CTX8).
RAJA ATRA (CHINESE COBRA).
EUKARYOTA; METAZOA; CHONDATA; VERTEBRATA; TETRAPODA;
LEPIDOSAURIA; SERPENTES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE.

MEDLINE, 87299637.

OLIVERA B.M., CRUZ L.J., DE SANTOS V., LECHEMINANT G.W., GRIFFIN D.,

ZEIKUS R.D., MCINTOSH J.M., GALYEAN R., VARGA J., GRAY W.R.,

RIVIER J.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRESYNAPTIC NEUROTOXIN; CALCIUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            46.2%;
                                                                                                                                                                                                                                                                                                                                                                                                    ۷,
                                                                                                                                                                                                                                                                                                                                                                                                              Score 31; DB
Pred. No. 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AMIDATION.
D9978077 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. 19;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GASTROPODA; PROSOBRANCHIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHANNEL
                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             UPDATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRESYNAPTIC MEMBRANES,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INHIBITOR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₿
                                                                                                                                                                                                                                                                                                                                                                                                                           ۲,
                                                                                                                                                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2;
                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VENOM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                         REPTILIA;
                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      THEY BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ۲
                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1,
                                                                                                                                            RESULT 9
HGF_HUMAN STAND
ID HGF_HUMAN STAND
AC P14210;
DT 01-JAN-1990 (REL. 13
DT 01-AUG-1991 (REL. 13
DT 15-JUL-1998 (REL. 36
DE HEPATOCYTE GROWTH FA
DE (HEPATOCYTE IN A).
                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 8
CXM_N
AC P4912
DT 01-FE
DT 01-FE
DT 01-FE
DT 15-JU
DE CYTOTO
OS NAJAN
OC LEPID
RN [1]
RP SEQUE
RC TISSU
RX MEDLI,
RA CHANG
RL EMBL,
DR PROSI
RM PROSI
RM PROSI
KW VENOW
FT CHAIN
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
FT DISUI
                            밁
                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STTTT
                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 6; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.

TISSUE-VENOM GLAND;

MEDLINE; 96190679.

CHANG L.-S., WU P.F., LIN J.;

BIOCHEM, BIOPHYS. RES. COMMUN. 2:

EMBL; Z54230; G1000509; -.

PROSITE; PS00272; SNAKE_TOXIN; 1

VENOM; CYTOTOXIN; CARDIOTOXIN; M
                      SEQUENCE FROM N.A.
MEDLINE; 91340155.
SEKI T., HAGIYA M., SHI
GENE 102:213-219(1991).
                                                                                          HOMO SAPIENS (HUMAN).
EUKARYOTA; METAZOA; CHORDATA;
EUTHERIA; PRIMATES.
                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID
DISULFID
DISULFID
DISULFID
SEQUENCE
                                                                                                                                      HGF OR HPTA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CXN_NAJAT STANDARD; PRT; 81 AA.

P49124;
01-FEB-1996 (REL. 33, CREATED)
01-FEB-1996 (REL. 33, LAST SEQUENCE UPDATE)
15-JUL-1998 (REL. 36, LAST ANNOTATION UPDATE)
CYTOTOXIN N PRECURSOR (CARDIOTOXIN N) (CTXN).
NAJA ATRA (CHINESE COBRA)
PUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; REPTILIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CHAIN
DISULFID
DISULFID
DISULFID
DISULFID
SEQUENCE
                                                                                                                                                                                                                                                                                                        \omega
                                                                                                                                                                                                                                                                                                                             1 RVCAAGRGETCYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \mathfrak{s}
                                                                                                                                                                                                                                                                                                    KTCAAGK-NLCYK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RVCAAGRGETCYR 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : ||||: : ||:
KACAAGK-NLCYK 44
                                                                                                                                                                                                                                                                                                                                                         6; Conserv
                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                          221
24
75
75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22
24
35
63
75
AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                   13, CREATED)
19, LAST SEQUENCE UPDATE)
36, LAST ANNOTATION UPDATE)
FACTOR PRECURSOR (SCATTER FACTOR)
                                                                                                                                                                                                                                                                                                    44
                                                                                                                                                                                                                                                                                                                             13
                                  SHIMONISHI
                                                                                                                                                                                                                                                                                                                                                                                                                                          21
81
59
74
80
                                                                                                                                                                                                                                                                                                                                                                      46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        81
42
59
74
80
8923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 42.9%;
46.2%;
                                                                                                                                                                                                                                                                                                                                                                    2.98;
                                                                                                                                                                                                                                                                                                                                                                                                                            ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WW;
                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.
CYTOTOXIN N.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                   Score 33.5; pred. No. 24; Mismatches
                                                                                                                                                                                                                                                                                                                                                      4.
                                                                                                    VERTEBRATA;
                                  :
:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 33.5; D
Pred. No. 24;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CYTOTOXIN 8.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
689435F4 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MULTIGENE FAMILY; SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           219:116-121(1996).
                                NAKAMURA
                                                                                                                                                                                                                              728
                                                                                                                                                                                                                            ₿
                                                                                               TETRAPODA; MAMMALIA;
                                                                                                                                                                                                                                                                                                                                                                              DB
                              Τ.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB
                                                                                                                                                                                                                                                                                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                               SHIMIZU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                                                                                           Length 81;
                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                       (SF)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81
                                                                                                                                                                                                                                                                                                                                                ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ::
                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                               ۲,
```

NEOGASTROPODA; CONIDAE.

REVIEW.

RESULT CRESULT
밁 å

ω

GKGASCHRT

끄

6 GRGETCYRT 14

NAJAT

Query Match Best Local Matches

Similarity 55.

39.7%; 55.6%;

DISULFID DISULFID DISULFID MOD_RES SEQUENCE

16 20 25

25 1 8 15 25 28

2626

MW;

```
DISCULIFIED BOND.

-i- SIMILARITY: CONTAINS 4 KRINGLE REGIONS.
-i- SIMILARITY: BELONGS TO PEPTIDASE FAMILY SI; AL
TRYPSIN FAMILY. BELONGS TO THE PLASMINOGEN SUB
EMBL; D90314; G219700; -
EMBL; D90319; G219700; JOINED.
EMBL; D90319; G219700; JOINED.
EMBL; D90320; G219700; JOINED.
EMBL; D90321; G219700; JOINED.
EMBL; D90323; G219700; JOINED.
EMBL; D90324; G219700; JOINED.
EMBL; D90325; G219700; JOINED.
EMBL; D90326; G219700; JOINED.
EMBL; D90326; G219700; JOINED.
EMBL; D90327; G219700; JOINED.
EMBL; D90328; G219700; JOINED.
EMBL; D90329; G219700; JOINED.
EMBL; D90329; G219700; JOINED.
EMBL; D90329; G219700; JOINED.
EMBL; D90330; G219700; JOINED.
EMBL; D90331; G219700; JOINED.
EMBL; D90331; G219700; JOINED.
EMBL; D90332; G219700; JOINED.
EMBL; D90331; G219700; JOINED.
EMBL; D90332; G219700; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZHOU H., MAZZULLA M.J., KAUFMAN J.D., STAHL S.J., WINGFIELD P.T., RUBIN J.S., BOTTARO D.P., BYRD R.A.; STRUCTURE 6:109-116(1998).

-I- FUNCTION: HGF IS A POTENT MITOGEN FOR MATURE PARENCHYMAL HEPATOCYTE CELLS, SEEMS TO BE AN HEPATORFORHIC FACTOR, AND ACTS AS GROWTH FACTOR FOR A BROAD SPECTRUM OF TISSUES AND CELL TYPES.

IT HAS NO DETECTABLE PROTEASE ACTIVITY.

-I- SUBUNIT: DIMER OF AN ALPHA CHAIN AND A BETA CHAIN LINKED BY A
                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE; 92331602.
LOKKER N.A., MARK M.R., LUI:
BAKER J.B., GODOWSKI P.J.;
EMBO J. 11:2503-2510(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
TISSUE-EMBRYONIC FIBROBLAST;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE; 90066676.
NAKAMURA T., NISHIZAWA T.
SUGIMURA A., TASHIRO K.,
NATURE 342:440-443(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE; 91025062.

SEKI T., IHARIA I., SUGIMURA A., SHIMONISHI M., NISHIZAWA

ASAMI O., HAGIYA M., NAKAMURA T., SHIMIZU S.;

BIOCHEM. BIOPHYS. RES. COMMUN. 172:321-327(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MIYAZAWA K., TSUBOUCHI H., NAKA D., TAKAHASHI K.,
ARAKAKI N., NAKAYAMA H., HIRONO S., SAKIYAMA O.,
GOHDA E., DAIKUHARA Y., KITAMURA N.;
BIOCHEM. BIOPHYS. RES. COMMUN. 163:967-973(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YOSHIYAMA Y., ARAKAKAI N., NAKA D., TAKAHASHI K., NAKAYAMA H., GOHDA E., KITAMURA N., TSUBOUCHI H., HISHIDA T., DAIKUHARA Y.;
BIOCHEM. BIOPHYS. RES. COMMUN. 175:660-667(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIGNAL SEQUENCE CLEAVAGE SITE. MEDLINE; 91207365.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REEDER H., FON
BIRCHMEIER W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE; 91334393.
WEIDNER K.M., ARAK
                                                                                                                                                                                                                                                                                                                                                                                                          STRUCTURE BY NMR OF 31-127. MEDLINE; 98154323.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROC. NATL. ACAD. SCI. U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE=LIVER;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE=LEUKOCYTE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MUTAGENESIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        M., ARAKAKI N., HARTMANN G., VANDEKERCKHOVE J., W
FONATSCH C., TSUBOUCHI H., HISHIDA T., DAIKUHARA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A T., HACLE
K., SHIMIZU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LUIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , HAGIYA M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              88:7001-7005(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .
A
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BENNETT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAKAHASHI K.,
SAKIYAMA O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            55-73 AND 495-520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Τ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G.L.,
                                                                                                                                                                                                                            ; ALSO KNOWN SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SHIMONISHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ROBBINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAKAHASHI K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HIRONO S., ISHII T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OKIGAKI M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               K.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Τ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WEINGART
                                                                                                                                                                                                                                          AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KONDO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
```

```
RESULT 10
HMD_MTM
D HMD_M
AC P3244
AC P3240
DT 01-0C
DT 01-NC
DT 01-NC
DT 01-NC
DE (EC 1
DE (ERAG
GN HMD
OS METH;
RN SEQUI
RX MEDL;
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          $\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\
                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; D90333; G219700; JOINED.
EMBL; M29145; G306846; -
EMBL; M29145; G306846; -
EMBL; M29145; G30682; -
EMBL; M16323; G32082; -
EMBL; M73239; G327936; -
EMBL; M73240; G337938; -
PIR; J40579; J40579,
PIR; J40579; J40579,
PIR; J605794; S06794,
PDB; 24626; 24-JUN-98.
MIM; 142409;
                                                                                                                     HMD_METWO STANDARD; PKY; 15....

P32441;
01-OCT-1993 (REL. 27, CREATED)
01-OCT-1993 (REL. 27, LAST SEQUENCE UPDATE)
01-OCT-1997 (REL. 35, LAST ANNOTATION UPDATE)
01-NOV-1997 (REL. 35, LAST ANNOTATION UPDATE)
H(2)-FORMING N5,N10-METHYLENETETRAHYDROMETHANOPTERIN DEHYDROGENASE
(EC 1.12.99.-) (H2-DEPENDENT METHYLENE-H4MPT DEHYDROGENASE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
DISULFID
DISULFID
DISULFID
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOD_RES
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIGNAL;
 MEDLINE; 92394151.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHAIN
                                                       METHANOBACTERIACEAE.
                                                                      METHANOBATERIUM WOLFEI.
ARCHAEBACTERIA; EURYARCHAEOTA; METHANOBACTERIALES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GROWTH
                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                       383 CDMSHGQDCYR 393
                                                                                                                                                                                                                                                                                                                                                                                           ω
                                                                                                                                                                                                                                                                                                                                                                                         CAAGRGETCYR 13
                                                                                                                                                                                                                                                                                                                                                                                                                              . Similarity
5; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PS00021; KRINGLE_1; PS50070; KRINGLE_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KRINGLE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          83133
                                                                                                                                                                                                                                                                                                                                                                                                                                                 48.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GLYCOPROTEIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POTENTIAL.

QR -> HK (IN REF. 4)

K -> N (IN REF. 4)

M -> V (IN REF. 4)

V -> A (IN REF. 4)

V -> A (IN REF. 4)

E -> K (IN REF. 4)

D -> N (IN REF. 4)

I -> V (IN REF. 4)

O -> I (IN REF. 4)

O -> E (IN REF. 4)

O -> R (IN REF. 4)

C -> R (IN REF. 4)

S -> N (IN REF. 4)

O -> N (IN REF. 4)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HEPATOCYTE GROWTH FACTOR ALPHA CHAIN.
HEPATOCYTE GROWTH FACTOR BETA CHAIN.
PYRROLIDONE CARBOXYLIC ACID.
PAP.
KRINGLE 1.
KRINGLE 2.
KRINGLE 3.
KRINGLE 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                ω
                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 38;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INTERCHAIN POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SERINE
                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROTEASE-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SERINE PROTEASE HOMOLOG
                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <del>بــا</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 728;
                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
RRARROCC DIT DAC
                                                                                                                                                                                                                          RESULT
TAC3_TA
                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCORDANCE FOR THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STECCCCCERR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 5
                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 7; Conserv
                                                                                                       3_TACGI STAN
TAC3_TACGI STAN
P18252;
01-NOV-1990 (REL. 1
01-NOV-1995 (REL. 1
04-NOV-1995 (REL. 3
TACHYPLEUS GIGAS (S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              L_TACGI STAN
TACI_TACGI STAN
P23684;
01-NOV-1991 (REL. 2
01-NOV-1995 (REL. 2
ŚEQUENCE.
MEDLINE; 91035357.
MUTA T., FUJIMOTO T., NAKAJIMA H.,
MUTA T. FUJIMOTO T. (1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                     MOD_RES
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EUKARYOTA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TACHYPLEUS GIGAS (SOUTHEAST ASIAN HORSESHOE CRAB), AND CARCINOSCORPIUS ROTUNDICAUDA (SOUTHEAST ASIAN HORSESHOE CRAB).
EUKARYOTA; METAZOA; ARTHROPODA; CHELICERATA; XIPHOSURA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ZIRNGIBL C., VAN DONGEN W., SCHWOERER B., VON BUENAU R.,
RICHTER M., KLEIN A., THAUER R.K.;
EUR. J. BICCHEM. 208:511-520(1992).
-1- CATALYTIC ACTIVITY: 5,10-METHYLENETETRAHYDROMETHANOPTERIN
H(+) = 5,10-METHENYLTETRAHYDROMETHANOPTERIN + H(2).
-1- COFACTOR: ZINC (POSSIBLE).
-1- PATHWAY: INVOLVED IN METHANOGENESIS.
-1- SUBGUNIT: HOMODIMER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ANTIBIOTIC; AMIDATION.
DISULFID 3 16
DISULFID 7 12
MON BES 17 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PIR; A38824; A38824. PIR; JX0124; JX0124.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TACHYPLESIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OXIDOREDUCTASE; METHANOGENESIS; ZINC NON_TER 1 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EQUENCE.
                                                                                                                                                                                                                                                                                          σ
                                                                                                                                                                                                                                                                                       RVCYRG---ICYR 14
                                                                                                                                                                                                                                                                                                                    RVCAAGRGETCYR 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GETCYRT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGCYRT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity 5; Conser
                                                                                        METAZOA; ARTHROPODA;
                                                                                                                                                                                                                                                                                                                                                                                                                                       17 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19 AA; 1911 MW;
                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                    (SOUTHEAST ASIAN HORSESHOE CRAB)
OA; ARTHROPODA; CHELICERATA; XIPH
                                                                                                                                    16, CREATED)
16, LAST SEQUENCE UPDATE)
32, LAST ANNOTATION UPDAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20, CREATED)
20, LAST SEQUENCE UPDATE)
32, LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                     2269 MW;
                                                                                                                                                                                                                                                                                                                                                                     37.8%;
53.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              38.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                   Score 29.5;
Pred. No. 3
                                                                                                                                                                                                                                                                                                                                                                                                                              AMIDATION.
7B171B7B CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              749D8DDC
                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30;
                                                                                                                                    UPDATE)
                                                                                                                                                                                                    17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CRC32;
                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A
                                                                                                                                                                                                                                                                                                                                                                                  DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۲
                                                                                      XIPHOSURA
                                                                                                                                                                                                                                                                                                                                                                                  1;
                                                                                                                                                                                                                                                                                                                                                    Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 19
                                                                                                                                                                                                                                                                                                                                                                               Length 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>;</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                               ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
   유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SONORWETERS
```

```
RESULT 13
                                                                                                                                                                                                                                                                                                                                        A CROCHET J., PERBAL B.;

AL MOL. CELL. BIOL. 12:10-21(1992).

C. IF FUNCTION: IMMEDIATE-EARLY PROTEIN LIKELY TO PLAY A ROLE IN CELL.

C. GROWTH REGULATION. ITS OVEREXPRESSION IS ASSOCIATED WITH

TUMORIGENESIS AND EXPRESSION OF A N-TERMINAL-TRUNCATED VERSION

C. OF NOV GENE IN CHICKEN EMBRYONIC FIBROBLASTS (CEF) IS SUFFICIENT

C. TISSUE SPECIFICITY: BRAIN AND HEART, AND AT A LOWER LEVEL IN

C. MUSCLE AND INTESTINE, IN THE EMBRYO. LUNG AND LESS SO IN BRAIN AND

C. MUSCLE AND INTESTINE, IN THE EMBRYO. LUNG AND LESS SO IN BRAIN AND

C. SPLEEN, IN ADULT CHICKEN.

C. DEVELOPMENTAL STAGE: MAV1-INDUCED NEPHROBLASTOMAS EXPRESS A HIGH

C. LEVEL OF NOV GENE WHOSE TRANSCRIPTION IS NORMALLY ARRESTED IN

C. ADULT KIDNEY.

C. SIMILARITY: BELONGS TO THE INSULIN-LIKE GROWTH FACTOR BINDING

PROTEIN FRAMILY. CEF-10/CYR61/CTFG/FISP-12/NOV PROTEIN SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
---hes 7; Conserv
                                                                                                                                                                                             EMBL; X59284; G63703; -.

PIR; S20078; S20078

PROSITE; PS00222; IGF_BINDING; 1

PROSITE; PS01185; CTCK_1; 1.

PROSITE; PS01225; CTCK_2; 1.

PROSITE; PS01208; VMFC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -I- FUNCTION: SIGNIFICANTLY INHIBITS THE GRAM-POSITYVE BACTERIA.
-I- TISSUE SPECIFICITY: HEMOCYTES.
-I- SIMILARITY: BELONGS TO THE TACHYPLE PIR; JX0125; JX0125.
ANTIBIOTIC; AMIDATION.
DISULFID 3 16 BY SIMILAR DISULFID 7 12 BY SIMILAR MOD_RES 17 17 AMIDATION.
        DOMAIN
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                            CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NOV_CHICK
P28686;
01-DEC-1992
01-DEC-1992
01-OCT-1996
                                                                                                                          DOMAIN
                                                                                                                                                                                 PROTO-ONCOGENE;
                                                                                                                                                                                                                                                                                                                        <del>+</del> +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-BROWN LEGHORN;
MEDLINE; 92107157.
MALOISEL V., MARTINERIE C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GALLUS GALLUS (CHICKEN).
FUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; AVES; NEOGNATHAE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID
MOD_RES
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-DEC-1992 (REL. 24, CREATED)
01-DEC-1992 (REL. 24, LAST SEQUENCE UPDATE)
01-CCT-1996 (REL. 34, LAST ANNOTATION UPDATE)
NOV PROTEIN PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                              SIMILARITY: CONTAINS 1 C-TERMINAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              տ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 RVCAAGRGETCYR 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RVCYRG---ICYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                               GROWTH FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   37.8%;
53.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ¥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HEMOCYTES.
TO THE TACHYPLESIN/POLYPHEMUSIN FAMILY
OR BINDING: SIGNAL.
POTENTIAL.
NOV PROTEIN.
VWEC.
CTCK.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DAMBRINE G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BY SIMILARITY.
BY SIMILARITY.
AMIDATION.
68E08384 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 29.5;
Pred. No. 31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                           CYSTINE KNOT-LIKE DOMAIN (CTCK)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        THE GROWTH OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PLASSIART G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GRAM-NEGATIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BRISAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1;
```

CARBOHYD SEQUENCE

38268

¥

C7044065 CRC32

```
RESULT NOVACULT NOVAC
RESULT 15
NOV_MOUSE
ID NOV_MO
AC Q64299
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DE NOV PR
GN NGV.
OS MUS MU
OC EUTHER
                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Loc
Matches
                                                                               NOV_MOUSE STANDA
Q64299;
Q1-NOV-1997 (REL. 35,
Q1-NOV-1997 (REL. 35,
Q1-NOV-1997 (REL. 35,
NOV PROTEIN HOMOLOG P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  __COTJA
NOV_COTJA
P42642;
01-NOV-1995
01-NOV-1995
01-OCT-1996
NOV PROTEIN
  MUS MUSCULUS (MOUSE).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; MAMMALIA;
EUTHERIA; RODENTIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
DISULFID
DISULFID
DISULFID
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.

SEMBLYED (AUG-1994) TO EMBL/GENBANK/DDBJ DATA BANKS.

-I- FUNCTION: IMMEDIATE-EARLY PROTEIN LIKELY TO PLAY A ROLE IN CELL

-I- GROWTH REGULATION (BY SIMILARITY).

-I- SIMILARITY: BELONGS TO THE INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN FAMILY. CEF-10/CYE61/CYE67/EISP-12/NOV PROTEIN SUBFAMILY.

-I- SIMILARITY: CONTAINS 1 VWFC DOMAIN.

-I- SIMILARITY: CONTAINS 1 TOP DOMAIN.

-I- SIMILARITY: CONTAINS 1 TOP DOMAIN.

-I- SIMILARITY: CONTAINS 1 TOP DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GALLIFORMES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COTURNIX COTURNIX JAPONICA (JAPANESE QUAIL).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; AVES; NEOGNATHAE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROTO-ONCOGENE;
                                                                                                                                                                                                                                                                                                     64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 VCAAGRGETC 11
||| |||:|
62 VCARQRGESC 71
                                                                                                                                                                                                                                                                                                                                           N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FOCAT
                                                                                                                                                                                                                                                                                                  VCARQRGESC 73
                                                                                                                                                                                                                                                                                                                          VCAAGRGETC 11
                                                                                                                                                                                                                                                                                                                                                                                Similarity 70. 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PS00222; IGF_BINDING; 1.
PS01185; CTCK_1; 1.
PS01225; CTCK_2; 1.
PS01208; VWFC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (REL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27
106
260
260
277
277
288
291
296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ą,
                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GROWTH FACTOR
                                                                       35, CREATED)
35, LAST SEQUENCE UPDATE)
35, LAST ANNOTATION UPDATE)
OG PRECURSOR (NOVH).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     38667 MW;
                                                                                                                                                                                                                                                                                                                                                                                               46.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46.2%;
70.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCK.
BY SIMILARITY.
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                               Score 36;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 36; DB
Pred. No. 32;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VWFC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NOV PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BINDING; SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C4F5928D CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                       354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     353 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
32;
                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1;
                                                                                                                                                                                       æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                   Length 353;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 351;
                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                       ç,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

Search completed: May Job time: 4002 sec

'n

1999,

16:05:43

```
뮍
                       δÃ
                                                                                                           Query Match
Best Local S
Matches 7
                                                                                              PROSITE, PSO1125
PROSITE, PSO1208
PROTO-ONCOGENE;
SIGNAL 1
CHAIN 22
DOMAIN 102
DOMAIN 261
DISULFID 261
DISULFID 278
DISULFID 289
DISULFID 292
DISULFID 297
ARBOHYD 91
ARBOHYD 354 AA;
                                                                                                                                                                                                                                                 PROSITE; PS00222; IGE_BINDING;
PROSITE; PS01185; CTCK_1; 1.
PROSITE; PS01225; CTCK_2; 1.
PROSITE; PS01208; VWFC; 1.
PROTO-ONCOGENE; GROWTH FACTOR B
                                                                                                                                                                                                                                                                                                                                                        MEDLINE; 96204003.

MERTINERIE C., CHEVALIER G., RAUSCHER F.J. III, PERBAL B.;

ONCOGENE 12:1479-1492(1996).

-1- FUNCTION: IMMEDIATE-EARLY PROTEIN LIKELY TO PLAY A ROLE IN CELL

GROWTH REGULATION (BY SIMILARITY).

-1- SIMILARITY: BELONGS TO THE INSULIN-LIKE GROWTH FACTOR BINDING

PROTEIN FAMILY. CEF-10/CYR61/CTFG/FISP-12/NOV PROTEIN SUBFAMILY.

-1- SIMILARITY: CONTAINS 1 C-TERMINAL CYSTINE KNOT-LIKE DOMAIN (CTCK)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               [1]
SEQUENCE FROM N.A.
STRAIN-129/SV, AND ICR; TISSUE-BRAIN;
SNAITH M.R., NATARAJAN D., TAYLOR L.B., CHOI C.P., MA
PERBAL B., SCHOFIELD P.N., BOULTER C.A.;
SUBMITTED (MAY-1996) TO EMBL/GENBANK/DDBJ DATA BANKS.
                                                                                                                                                                                                                                                                                                          EMBL; X97863; E1181580; --
EMBL; Y09257; E281106; --
EMBL; X96585; E228599; --
EMGD; MGI:109185; NOV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
   60
                         N
VCAAGRGETC 11
                                              7; Conserv
                                              Conservative
                                                                                                        38928
                                                         46.2%;
                                                                                                        ₩,
                                                                                                   VWFC.
CTCK.
BY SIMILARITY.
POTENTIAL.
POTENTIAL.
65A4FF0E CRC32;
                                              1.
                                                         Score 36;
Pred. No.
                                                                                                                                                                                                                        POTENTIAL.
NOV PROTEIN HOMOLOG.
                                                                                                                                                                                                                                                 BINDING; SIGNAL.
                                              Mismatches
                                                       DB
32;
                                                                                                                                                                                                                                                                                                                                                   CYSTINE KNOT-LIKE DOMAIN (CTCK).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHOI C.P., MARTINERIE
                                                                   ٠.
                                                                   Length 354;
                                             Indels
                                            0,
                                           Gaps
                                           0
```

ğ

protein on:

protein search, using sw model

GenCore version 4.5 Copyright (c) 1993 - 1998 Compugen Ltd

```
No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3, 1999, 16:05:42; Search time 18.06 Seconds (without allgaments) 22.293 Million cell updates/sec
                                                        P80367
P25670
P08709
P17511
P35454
P011179
P31514
P19883
P50291
P47931
P47931
P47931
P47931
P47931
P47931
P50699
P21674
P14585
P50699
P216562
P50699
P165652
Q079693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P43396
Q94131
P46531
P05336
P14219
Q00945
Q005493
Q05493
P98089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Description
                                                  3 rattus norv
3 actinidia c
4 strongyloce
                                                                                                                                                   cavia porce
arabidopsis
homo sapien
                                                                                                                                                                                                                      red se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    homo sapien
caenorhabdi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9 pennisetum
5 lymnaea sta
3 yarrowia li
1 prunus aviu
9 rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7 pseudomonas
5 coffea arab
1 caenorhabdi
1 homo sapien
6 hordeum vul
                                                                                                                                                                                                                                                                                  caenorhabd:
                                                                                                                                                                                                                                                                                                                       rattus
                                                                                                                                                                                                                                                                                                                                                                                                                 bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mus musculu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mus musculu
malus domes
caenorhabdi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    paracentrot
aspidelaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mus musculu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             helix pomat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              scylla serr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   saccharomyc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               crassostrea
                                                                                                                                                                                                                                                sea tur
                                                                                                                                                                                                                                                                                                                                                     scrofa
                                                                                                                                                                                                                                                                                                                                                                                   musculu
RESULT 2

MT2_CALSI
ID MT2_CALSI STANDARD; PRT; 58 AA.
AC P55950;
DT 01-NOV-1997 (REL. 35, CREATED)
DT 01-NOV-1997 (REL. 35, LAST SEQUENCE UPDATE)
DT 01-NOV-1997 (REL. 35, LAST ANNOTATION UPDATE)
DE METALLOTHIONEIN-II (MT-II) (MT-IIB/MT-IIA).
OS CALLINECTES SAPIDUS (BLUE CRAB).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 1
MTCU_HELDO
ID MTCU_H
AC P55947
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-
                                                                                                                                                                                                                                                                                                                                                                                                    片
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOD_RES
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
META
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE.

SEQUENCE.

SEQUENCE.

TISSUB-MANTLE;

MEDLINE; 97373947.

MALLINGER R., BERGER B., HUNZIKER P.E., KAEGI J.H.R.;

DALLINGER R., BERGER B., HUNZIKER P.E., KAEGI J.H.R.;

INTURE 388:237-238(1997).

I PUNCTION: THE METALLOTHIONEINS ARE INVOLVED IN THE CELLULAR SEQUESTRATION OF TOXIC METAL INONS AND REGULATION OF ESSENTIAL TRACE ELEMENTS. THIS ISOFORM BINDS EXCLUSIVELY COPPER.

I DOMAIN: 14 CYSTEINE RESIDUES ARE ARRANGED IN C'A-C GROUPS. THESE ARE THOUGHT TO BE THE METAL-BINDING SITES IN OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         METAL-BINDING;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                44
                                                                                                                                                                                                                                                                                                                                                                                      37 HCSNDDCKCGSQC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACETYLATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MTCU_HELPO STANDARD; PRT; 64 AA.
P55947;
P55947;
01-NOV-1997 (REL. 35, CREATED)
01-NOV-1997 (REL. 35, LAST SEQUENCE UPDATE)
01-NOV-1997 (REL. 35, LAST SEQUENCE UPDATE)
COPPER.METALLOTHIONEIN (CU-MT).
COPPER.METALLOTHIONEIN (CU-MT).
HELIX POMATIA (ROMAN SNAIL) (EDIBLE SNAIL).
EUKARYOTA; METALOA; MOLLUSCA; GASTROPODA; PULMONATA; STYLOWMATOPHORA;
                                                                                                                                                                                                                                                                                                                                                                                                                                     2 HCDSSECKSSPRC 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
5; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    : BELONGS TO FAMILY 2 IN METALLOTHIONEIN SUPERFAMILY METAL-THIOLATE CLUSTER; CHELATION; COPPER;
                                                                                                                                                                                                                                                                                                                                                                                             49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             111171
111171
111171
111171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
11171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1171
1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          59.5%;
38.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               416
67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            , WM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 44; DB 1
Pred. No. 1.2;
5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1E294035 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FA9_BOVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P00741
Q26497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bos taurus
sphaerechin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
```

Result No.

Score

Query Match

B

ä

SUMMARIES

59.5 54.1 51.4 56.8 50.0 48.6 59.5 59.5

MTCL HELPO
MTZ_CALSI
MT_CRAVI
FAIO_HUMAN
MTC_YEAST
MTZ_SCYSE
NOTC_XENLA
NTCL_MOUSE
NTCL_MOUSE
NTG_MALDO
YLMI_CAPEL
MT_POTPO

2524 2531 66 111 58 400 400 410

MUCI_RAT
MI_PARLI
NXL1_ASPSC
FA7_HUMAN
MT1_CABEL
NEU1_MOUSE
FSA_HUMAN
FSA_BOVIN
FSA_BOVIN
FSA_MOUSE
FSA_PIG
FSA_PIG
FSA_PIG
FSA_RAT
LIP_CAREL
LIP_TURRS
FA12_CAPEL
LIP_TURRS
FA12_CAPET
LIP_TURRS
FA12_CAPET
LIP_TURRS
FA12_CAPET
LIP_TURRS
FA12_CAPET
LIP_TURRS
FA12_CAPET
LIP_TURRS
FA12_CAPET
LIP_TURRS
FA12_CAPET
LIP_TURRS
FA12_CAPET
LIP_TURRS
FA12_CAPET
MT3_CATCH

0

BJAR_MOUSE BJAR_RAT TRA8_PSESH MT1_COFAR PIE1_CAEEL NTC1_HUMAN ADH1_HORVU ADH1_PENAM CONO_LYMST THIK_YARLI MT3_PRUAV

Database : Searched: Scoring table: Sequence:

SwissProt_36:*

74019 seqs, 26840295 residues

PAM150

is

Perfect score: Title:

US-09-037-460-2_COPY_30_44 QHCDSSECKSSPRCK 15

```
CCC

TEST STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MT_CRAVI STANDARD; PRT; 74 AA.

P33038;
01-NOV-1991 (REL. 20, CREATED)
01-APR-1993 (REL. 25, LAST SEQUENCE UPDATE)
01-NOV-1997 (REL. 35, LAST ANNOTATION UPDATE)
METALLOTHIONEIN (MT).
CRASSOSTREA VIRGINICA (EASTERN OYSTER).
EUKARYOTA; METAZOA; MOLLUSCA; PELECYPODA (BIVALVIA);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            METAL
VARIANT
SEQUENCE
ROESIJADI G., VESTLING M.M., MURPHY C.M., KLERKS P.L., BIOCHIM. BIOPHYS. ACTA 1074:230-236(1991).
-!- FUNCTION: THE METALLOTHIONEINS ARE INVOLVED IN THE
                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE; 91363394.
UNGER M.E., CHEN T.T.,
ROESIJADI G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOMAIN
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
                                                                                                                                                                                                  MEDLINE; 89372898.
ROESIJADI G., KIEI
ARCH. BIOCHEM. BIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE.
MEDLINE; 96033062.
BROUWER M., ENGHILD J., HOEXUM-BROUWER BIOCHEM. J. 311:617-622(1995).
                                                                                                                                                                                                                                                                                                                                                                 BIOCHIM. BIOPHYS. ACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                         MEDLINE; 91291855
                                                                                                                    TISSUE=GILL
                                                                                                                                           SEQUENCE OF 1-24, AND ACETYLATION
                                                                                                                                                                                                                                                                                TISSUE-GILL
                                                                                                                                                                                                                                                                                                             SEQUENCE OF 1-27.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OSTREOIDA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  METAL-BINDING;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EUKARYOTA;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -!- SIMILARITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -!- FUNCTION: BINDS SIX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CADMIUM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDSSECKSSPRCK 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CKEGECKTGCKCK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 46.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OSTREIDAE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  METAZOA;
                                                                                                                                                                                                  M. BIOPHYS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22 TTGGGGEEE 4477 TTGG 77 TTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           54.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ARTHROPODA; CRUSTACEA; MALACOSTRACA
                                                                                                                                                                                            S., KLERKS P.;
. 273:403-413(1989).
                                                                                                                                                                                                                                                                                                                                                                 1074:371-377(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                      MURPHY C.M., VESTLING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DIVALENT METAL IONS. KNOWN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FAMILY 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 40; DB 1
Pred. No. 4.4;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MILY 3 IN CLUSTER;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \triangleright \triangleright \triangleright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₩.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ***
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (IN MT-IIA).
CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHELATION;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            METALLOTHIONEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    THOGERSEN I., TRUNCALI A.;
                                                                                                                                                                                                                                                                                                                                                                                                                        м.
М.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COPPER;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                        FENSELAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TO BIND COPPER AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PTERIOMORPHIA;
                                                          FENSELAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUPERFAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                        ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                          C.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
RESULT
FA10_H
 몆
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STIKKERRECCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUESTRATION OF TOXIC METAL IONS.
-!- INDUCTION: BY CADMIUM.
-!- PTM: THIS MT OCCURS IN BOTH ACETYLA:
-!- SIMILARITY: BELONGS TO FAMILY 2 IN 1
EMBL; X59862; G28878; -.
PIR; S05645; S05645.
PIR; S17156; S17156.
HSSP; P02805; 1DME.
                                                                                                                                                                                                                                                                                                                                                                                                     21-JUL-1986
01-OCT-1989
01-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INIT_MET
MOD_RES
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                 FA10_HUMAN P00742;
         MEDLINE; 9
                                                        MEDLINE;
LEYTUS S.
                                                                                           MEDLINE; 83257207.

MEDLINE; 83257207.

MCMULLEN B.A., FUJIKAWA K., KISIEL W., KWA E.Y., WEINSTEIN B.;
BIOCHEMISTRY 22:2875-2884(1983).
                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
MEDLINE: 87026600.
LEYTUS S. FOSTER D.C., KURACHI
BIOCHEMISTRY 25:5098-5102(1986).
                                                                                                                                                                                                                                                                                                         MEDLINE; 91216473.
MESSIER T.L., PITIMAN D.D.,
GENE 99:291-294(1991).
                                               PROC. NATL.
                                                                                                                                 SEQUENCE OF 41-179.
                                                                                                                                                    GENE 41:311-314(1986)
                                                                                                                                                             MEDLINE; 86221713
KAUL R.K., HILDEBI
                                                                                                                                                                                                                              SEQUENCE OF 13-488
MEDLINE; 85216545.
                                                                                                                                                                                                                                                                                                                                                                HOMO SAPIENS (HUMAN).
EUKARYOTA; METAZOA; CHORDATA;
                                                                                                                                                                                                                                                                                                                                                                                             COAGULATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                     HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HSSP; P02805; 1DME.
METAL-BINDING; METAL-THIOLATE
                                                                           SEQUENCE OF 115-488 FROM
                                                                                                                                                                                          SEQUENCE OF 19-488
                                                                                                                                                                                                             PROC. NATL.
                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                        EUTHERIA;
                            SEQUENCE OF 183-234,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18
 J. BIOCHEM.
                                                                                                                                                                                                            M.R., HAY C.W., MCGILLIVRAY R.T.A.;
. NATL. ACAD. SCI. U.S.A. 82:3591-3595(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CPATGCKCGPGCK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDSSECKSSPRCK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             l Similarity
6; Conserv
                                                      84222026.
S.P., CHUNG
                    94062825
          MORITA T.;
                                                                                                                                                                                                                                                                                                                                                        PRIMATES.
                                                                                                                                                               HILDEBRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             74
                                                ACAD.
                                                                                                                                                                                                                                                                                                                                                                                           (REL. 01, CREATED)
(REL. 12, LAST SEQUENCE UPDATE)
(REL. 35, LAST ANNOTATION UPDATE)
FACTOR X PRECURSOR (EC 3.4.21.6)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                              CHUNG D.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ã
                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
218:153-163(1993)
                                                                                                                                                                                          FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15
                                                                                                                                                                                                                                        FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7213
                             AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        51.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     H0
                                                                                                                                                             8.
                                                                                                                                                                                          z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ¥.
                                                                          N.A.
                             CARBOHYDRATE-BINDING SITES
                                             KISIEL W., KURACHI K., D. S.A. 81:3699-3702(1984).
                                                                                                                                                                                          Þ
                                                                                                                                                              ROBERTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BOTH ACETYLATED AND NON-ACETYLATED FORMS. FAMILY 2 IN METALLOTHIONEIN SUPERFAMILY.
                                                                                                                                                                                                                                                                                                                   LONG G.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACETYLATION (PARTIAL) 587F7336 CRC32;
                                                                                                                                                                                                                                                                                                                                                                VERTEBRATA; TETRAPODA;
                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLUSTER;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ced. No. 10;
Mismatches
                                                                                                                                                             s.,
                                                                                                                                                                                                                                                                    .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                           488
                                                                                                                                                              JAGADEESWARAN
                                                                                                                                                                                                                                                                    DAVIE
                                                                                                               SASAGAWA
                                                                                                                                                                                                                                                                                                                   KAUFMAN R.J., CHURCH W.R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHELATION; CADMIUM
                                                                                                                                                                                                                                                                                                                                                                                                                                           ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1:
                                                                                                                                                                                                                                                                   E.W.;
                                                                                                                                                                                                                                                                                                                                                                                            (STUART
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                               Ŧ.,
                                                        DAVIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                               HOWALD W.N.,
                                                                                                                                                                                                                                                                                                                                                                                            FACTOR).
                                                                                                                                                                                                                                                                                                                                                                 MAMMALIA;
                                                        Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 74;
                                                        .
¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
MOD_RES
MOD_RES
MOD_RES
MOD_RES
MOD_RES
MOD_RES
MOD_RES
MOD_RES
MOD_RES
MOD_RES
MOD_RES
MOD_RES
MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PIR; A00924; EXHU.
PIR; A25853; A25853.
PIR; A24478; A24478
PDB; LHCG; 08_MAY-95.
PDB; LFAX; 29-OCT-97.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROSITE; PS00011; GLU_CARBOXYLATION; 1.
PROSITE; PS00011; GLU_CARBOXYLATION; 1.
PROSITE; PS00012; EGF_1; 1.
PROSITE; PS00013; TRYPSIN_HIS; 1.
PROSITE; PS00135; TRYPSIN_SER; 1.
PROSITE; PS00135; TRYPSIN_SER; 1.
PROSITE; PS01186; EGF_2; 2.
PROSITE; PS01187; EGF_CA; 1.
GLYCOPROTEIN; HYDROLASE; SERINE PROTEASE; PLASMA; BLOOD COAGULATION; GAMMA-CARBOXYCLUTAMIC ACID; HYDROXYLATION; CALCIUM-BINDING; VITAMIN SIGNAL; ZYMOGEN; EGF-LIKE DOMAIN; REPEAT; 3D-STRUCTURE.
                                                                                                                                                                                                                                                                                                       CHAIN
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                               CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; K03194; G182841; --
EMBL; M57285; G182390; --
EMBL; L00390; G182831; J
EMBL; L00391; G182831; J
EMBL; L00392; G182831; J
EMBL; L00393; G182831; J
EMBL; L00394; G182831; J
EMBL; L00395; G182831; J
                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                      CHAIN
                                                                                                                                                                                                                                                                                                                                                                           PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                          PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MIM; 134530; -.
MIM; 227600; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         J. MOL. BIOL. 232:947-966(1993).

-!- FUNCTION: FACTOR XA IS A VITAMIN K-DEPENDENT GLYCOPROTEIN THAT CONVERTS PROTHEOMBIN TO THROMBIN IN THE PRESENCE OF FACTOR VA, CATALYTIC ACTIVITY: PREFERENTIAL CLEAVAGE: ARG-|-THR AND THEN ARG-|-THR AND THEN PROTHROMBIN TO FORM THROMBIN.

-!- CATALYTIC ACTIVITY: PREFERENTIAL CLEAVAGE: ARG-|-THR AND THEN ARG-|-THE DONDS IN PROTHROMBIN TO FORM THROMBIN.

-!- SUBUNIT: THE TWO CHAINS ARE FORMED FROM A SINGLE-CHAIN PRECURSOR BY THE EXCISION OF TWO ARG RESIDUES AND ARE HELD TOGETHER BY 1 OR MORE DISULFIDE BONDS.

-!- PTM: THE VITAMIN K-DEPENDENT, ENZYMATIC CARBOXYLATION OF SOME GLUTAMIC ACID RESIDUES ALLOWS THE MODIFIED PROTEIN TO BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <del>+</del> <del>+</del> <del>+</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PADMANABHAN K., PADMANABHAN K.P., TULINSKY A., PARK C.H., BODE HUBER R., BLANKENSHIP D.T., CARDIN A.D., KISIEL W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 [8]
X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS) OF 86-179 AND 235-278.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PTM: N- AND O-GLYCOSYLATED.

PTM: THE ACTIVATION PEPTIDE IS CLEAVED BY FACTOR IXA (IN THE INTRINSIC PATHWAY), OR BY FACTOR VIIA (IN THE EXTRINSIC PATHWAY).

SIMILARITY: CONTAINS 2 EGF-LIKE DOMAINS.

SIMILARITY: EELONGS TO PEPTIDASE FAMILY S1; ALSO KNOWN AS THE
                                                                                                                                                                                                                                                                                                     41
183
183
235
235
125
                                                                                                                                                                                                                                                                            488
234
488
122
165
488
                                      JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
                        GAMMA-CARBOXYGLUTAMIC ALGAMMA-CARBOXYGLUTAMIC ALGAMMA-
                                                                                                                                                                                                                                                                                     ACTIVATED FACTOR XA, HEAVY CHAIN. EGF-LIKE 1, CALCIUM-BINDING (POTENTIAL).
                                                                                                                                                                                                                                                                          CATALYTIC.
                                                                                                                                                                                                                                                                                                                                                         FACTOR X LIGHT CHAIN.
FACTOR X HEAVY CHAIN.
ACTIVATION PEPTIDE.
                             ACID.
ACID.
ACID.
ACID.
ACID.
ACID.
ACID.
ACID.
ACID.
ACID.
ACID.
ACID.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Σ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   *
```

```
ACCOMPAND DITERPORT OF STREET OF STR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MTC_YEAST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ν
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 5
            STRAIN=S288C / AB972;

MEDLINE; 94378003.

JOHNSTON M., ANDREWS S., BRINKMAN R., COOPER J., DING H., DOVER J.,

DU Z., FAVELLO A., FULTON L., GATTUNG S., GEISEL C., KIRSTEN J.,

BUCABA T., HILLIER L., JIER M., JOHNSTON L., LANGSTON Y.,

LATREILLE P., LOUIS E.J., MACRI C., MARDIS E., MENEZES S., MOUSER L.,

NHAN M., RIFKLN L., RILES L., ST PETER H., TREVASKIS E., VAUGHAN K.,

VIGNATI D., WILCOX L., WOHLDMAN P., WATERSTON R., WILSON R.,

VAUDIN M.;

SCIENCE 265:2077-2082(1994).
                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A. MEDLINE; 84221953.
BUTT T.R., STERNBER ROSENBERG M., CROOK
                                                                                                                                                                                                         SEQUENCE FROM N.A.
STRAIN=S288C / ABS
                                                                                                                                                                                                                                                                    MOL. GEN. GENET.
                                                                                                                                                                                                                                                                                      JEYAPRAKASH A.,
                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. MEDLINE; 91203809.
                                                                                                                                                                                                                                                                                                                                                                   PROC. NATL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
MEDLINE; 84119482.
KARIN M., NAJARIAN R.C., HASLINGER A., VALENZUELA P.,
FOGEL S.;
PROC. NATL. ACAD. SCI. U.S.A. 81:337-341(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-APR-1988 (REL. 07, CREATED)
01-APR-1988 (REL. 07, LAST SEQUENCE UPDATE)
15-JUL-1998 (REL. 36, LAST ANNOTATION UPDATE)
METALLOTHIONEIN (CUC-MT) PRECURSOR (COPPER CHELA)
CUP1 OR MTH1 OR YHR053C OR YHR055C.
SACCHAROMYCES CERRYISIAE (BAKER'S YEAST).
EUKARYOTA; FUNGI; ASCOMYCOTINA; HEMIASCOMYCETES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MTC_YEAST
P07215;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DQCETSPCQNQGKCK 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QHCDSSECKSSPRCK 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
5; Conserv
                                                                                                                                                                                                                                                                                                                                                         M., CROOKE S.T.;
L. ACAD. SCI. U.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  488 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                            WEICH J.W., FOGEL S.;
225:363-368(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         342
246
277
404
443
288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                54731 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    33.3%;
                                                                                                                                                                                                                                                                                                                                                       .S.A. 81:3332-3336(1984).
                                                                                                                                                                                                                                                                                                                                                                                       GORMAN J.A., CLARK P., HAMER D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 42; DB
Pred. No. 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KVRV -> E (IN REF
G -> S (IN REF. 3
; 49BD04F3 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHARGE
CHARGE
CHARGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INTERCHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (COPPER CHELATIN)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RELAY SYSTEM.
RELAY SYSTEM.
RELAY SYSTEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RELAY
RELAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          F. 3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WELCH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ٦.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
```

0;

SEQUENCE

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PETERSON C.W., NARULA S.S., ARMITAGE I.M.;

REPBS LETT. 379:85-93(1996).

C -:- FUNCTION: PROTECTS THE CELL AGAINST COPPER TOXICITY BY TIGHTLY

C CHELATING COPPER IONS. CAN BINDS 8 COPPER IONS.

C :-- SIMILARITY: BELONGS TO FAMILY 12 IN METALLOTHIONEIN SUPERFAMILY.

REMBL; WO0204; G17338; -.

REMBL; WO0061; G487953; -.

REMBL; U00061; G487951; -.

REMBL; U00061; G487951; -.

REMBL; U00061; G487951; -.

REMBL; U00061; S14049.

RIR; S14049; S14049.

RIR; S14049; S14049.

RIR; S46703; S46703.

RIR; S46703; S46705.

REMBL; HAOG: 24-DEC-97.

REMBL; HAOG: 24-DEC-97.

REMBL; LAOG: 24-DEC-97.
                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 4; Conser
                                                                                                                                                                                                                                           _SCYSE
_STANDARD: PRT: 57 AA.
P02806;
21-JUL-1986 (REL. 01, CREATED)
21-JUL-1986 (REL. 01, LAST SEQUENCE UPDATE)
01-NOV-1997 (REL. 35, LAST ANNOTATION UPDATE)
METALLOTHIONEIN-II (MT-II).
SCYLLA SERRATA (MUD CRAB).
                         DOMAIN
DOMAIN
METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PDB; 1AQS; 24-DEC-97.
SGD; L0000436; CUP1.
METAL-BINDING; METAL-THIOLATE CLUSTER; CHELATION; COPPER;
  METAL
METAL
                                                                                                                              MEDLINE; 82142340.

LERCH K., AMMER D., OLAFSON R.W.;

J. BIOL. CHEM. 257:2420-2426(1982).

7: FUNCTION: METALLOTHIONEINS HAVE A HIGH CONTENT OF CYSTEINE RESIDUES THAT BIND VARIOUS HEAVY METALS. CLASS I MTS IN MARINE CRUSTACEA ARE INVOLVED IN THE SEQUESTRATION OF ELEVATED LEVELS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE; 88228044.
GEORGE G.N., BYRD J., WINGE D.R.;
J. BIOL. CHEM. 263:8199-8203(1988).
                                                                                               PIR; A03284; SMKD2S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE: 86033949.
WINGE D.R., NIELSON K.B., GRAY W.R.,
J., BIOL. CHEM. 260:14464-14470(1985).
                                                                       HSSP; P02805; 1DMC.
METAL-BINDING; METAL-THIOLATE CLUSTER;
                                                                                                         OF HEAVY-METAL IONS.
-!- SIMILARITY: BELONGS TO FAMILY 3 IN METALLOTHIONEIN SUPERFAMILY
                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                EUKARYOTA; METAZOA; ARTHROPODA; CRUSTACEA; MALACOSTRACA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE; 96159028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            X-RAY ABSORPTION STUDIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRUCTURE BY NMR OF 9-48
                                                                                                                                                                                                                                                                                                                                                                             16
                                                                                                                                                                                                                                                                                                                                                                           2 HCDSSECKSSPRC 14
:|::||:::|
16 QCQCGSCKNNEQC 28
                                                                                                                                                                                                                                                                                                                                         σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; S46705; S46705.
; 1AOO; 24-DEC-97.
; 1AQQ; 24-DEC-97.
; 1AQQ; 24-DEC-97.
; 1AQR; 24-DEC-97.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
     29
54
11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6650 MW;
   28
57
11
                                                                                                                                                                                                                                                                                                                                                                                                                                       50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             œ
CLUSTER
CLUSTER
CLUSTER
CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 37;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     METALLOTHIONEIN A7B05F14 CRC32;
                                                ALPHA
                                                             BETA
                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
  m m m m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HAMER D.H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
12;
                                                                       CHELATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 61;
                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                         0;
```

```
ALD COCKER AREA REALD COCKER A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 5; Conserv
TRANSMEM
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
                                                                                                                                                                                             PROSITE; PSO0010; ASX_HYDROXYL; 23.

PROSITE; PS00012; EGF_1; 34.

PROSITE; PS01186; EGF_2; 29.

PROSITE; PS01187; EGF_CA; 21.

DIFFERENTIATION; NEUROGENESIS; REPEAT; ANK REPEAT; EGF-LIKE DOMAIN;
TRANSMEMBRANE; SIGNAL; GLYCOPROTEIN.

SIGNAL 1 19 POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NEUROGENIC LOCUS NOTCH PROTEIN HOMOLOG PRECURSOR (XOTCH PROTEIN).
                                                                                                                                                                                                                                                                                                                                                                      SUBMITTED (JUN-1996) TO EMBL/GENBANK/DDBJ DATA BANKS.

-! SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.

-!- DEVELOPMENTAL STAGE: EXPRESSED ALMOST UNIFORMLY IN

-!- SIMILARITY: HIGH, WITH OTHER NOTCH TYPE PROTEINS.

-!- SIMILARITY: CONTAINS 36 EGF-LIKE DOMAINS.

-!- SIMILARITY: CONTAINS 3 LIN/NOTCH REPEATS.

-!- SIMILARITY: CONTAINS 6 ANK REPEATS.
                                                                                                                                                                                                                                                                                                                        EMBL; M33874; G1364263;
PIR; A35844; A35844.
HSSP; P20693; 1ESL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
MEDLINE; 90385285.
COFFMAN C., HARRIS W., KINTNER
SCIENCE 249:1438-1441(1990).
                                                                                                                                                                DOMAIN
                                                                                                                                                                                  CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REVISIONS TO 1759-1782.
KINTNER C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          XENOPUS LAEVIS (AFRICAN CLAWED FROG).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; AMPHIBIA; ANURA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NOTC_XENLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            XENLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11 CKEGECKTGCKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3 CDSSECKSSPRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           555443332222206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             55544333222225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     48.6%;
41.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MW.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 36;
Pred. No.
4; Mismatc
                                                                                                                   POTENTIAL.

REUROGENIC LOCUS NOTCH PROTEIN HOMOLOG
EXTRACELLULAR (POTENTIAL).

POTENTIAL.

CYTOPLASMIC (POTENTIAL).
EGF-LIKE 1.

EGF-LIKE 2.

EGF-LIKE 3.

EGF-LIKE 4.

EGF-LIKE 5.

CALCIUM-BINDING (POTENTIAL).

EGF-LIKE 7, CALCIUM-BINDING (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLUSTER
CLUSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4DEEE236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               *********
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     D₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω,.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                  EARLY EMBRYOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

DOMAIN DO
3344 441711 441711 5552 5552 6552 6552 6552 6552 6552 65
110186 1110
EGF-LIKE 8, CALCIUM-BINDING (POTENTIAL). EGF-LIKE 10. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 11. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 12. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 13. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 14. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 15. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 18. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 19. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 19. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 21. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 21. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 22. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 23. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 24. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 25. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 26. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 27. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 28. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 29. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 29. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 29. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 30. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 31. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 32. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 33. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 34. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 35. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 36. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 37. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 38. CALCIUM-BINDING (POTENTIAL). EGF-LIKE 39. CALCIUM-BINDING (P
DISULFID DIS
533 533 553 553 553 662 662 662 664 664 664 664 664
5542 5562 562 562 662 663 663 663 663 663 663 6
BY SIMILARITY BY

0

Gaps

0

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 7
                                                       TRANSMEM
DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
REPEAT
REPEAT
REPEAT
REPEAT
REPEAT
REPEAT
REPEAT
REPEAT
REPEAT
REPEAT
REPEAT
REPEAT
REPEAT
REPEAT
REPEAT
REPEAT
REPEAT
REPEAT
                                            CARBOHYD
                                                                                                                                                                                                                                                                                                                          MGD; MGI
PROSITE;
                                                                                                                                                                                                                                                      SIGNAL
                                                                                                                                                                                                                                                           PROSITE; PS00010; ASX_HYDROXYL; 22.
PROSITE; PS00122; EGF_1; 34.
PROSITE; PS01186; EGF_2; 27.
PROSITE; PS01187; EGF_CA; 21.
DIFFERENTIATION; NEUROGENESIS; REPEAT; ANK REPEAT;
TRANSMEMBRANE; SIGNAL; GLYCOPROTEIN.
                                                                                                                                                                                                                                                                                                                                            -!- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
-!- DEVELOPMENTAL STAGE: EXPRESSED ALMOST UNIFORMLY IN
-!- SIMILARITY: CONTAINS 36 EGF-LIKE DOMAINS.
-!- SIMILARITY: CONTAINS 3 LIN/NOTCH REPEATS.
-!- SIMILARITY: CONTAINS 6 ANK REPEATS.
-!- SIMILARITY: HIGH, WITH OTHER NOTCH-TYPE PROTEINS.
EMBL, Z11886; G288503; --
                                                                                                                                                                                                                                                                                                                                                                                                                        FRANCO DEL AMO F., SMITH D.E., SWIATEK P.J., GREENSPAN R.J., MCMAHON A.P., GRIDLEY T.; DEVELOPMENT 115:737-744(1992).
                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                            CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FRANCO DEL AMO F., GENDRON COPELAND N.G., GRIDLEY T., GENOMICS 15:259-264(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 1551-2170 FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MUS MUSCULUS (MOUSE).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; MAMMALIA;
EUTHERIA; RODENTIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-FEB-1996 (REL. 33, 15-JUL-1998 (REL. 36, 1 NEUROGENIC LOCUS NOTCH NOTCH1 OR MOTCH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE-EMBRYO,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A
TISSUE=EMBRYO;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | :| ||:: |||
832 CAGSPCKNGGRCK 844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
                                                                                                                                                                                                                                                                                                                                   MGI:97363; NOTCH1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDSSECKSSPRCK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          93194170.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                93048835.
                                                                 1449
1445
1445
1481
1523
1523
1865
1865
1965
1912
1944
1978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA;
                                                                                        1942
1975
                                                                                                                                                              1480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENDRON-MAGUIRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CREATED)
LAST SEQUENCE UPDATE;
LAST ANNOTATION UPDATE;
CH HOMOLOG PROTEIN 1 PRECURSOR (MOTCH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             59.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         275123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    z
                                                    ANK
ANK
ANK
                                                                                                                                                                                                               POTENTIAL.

POTENTIAL.

NEUROGENIC LOCUS NOTCH HOMOLOG

FXTRACELLULAR (POTENTIAL).
                    POTENTIAL
                             POTENTIAL
                                                                                                                                                                                         CYTOPLASMIC (POTENTIAL). 36 X EGF-TYPE REPEATS.
                                                                                                                                               LIN/NOTCH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MW;
                                                                                                                                                          LIN/NOTCH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                  MOTIF 1.
MOTIF 2.
MOTIF 3.
MOTIF 4.
MOTIF 5.
MOTIF 6.
                                                                                                                                                                     LIN/NOTCH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        E63584B1 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SWIATEK P.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A
                                                                                                                       REPEATS
                                                                                                                                                                   REPEATS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                               GENDRON-MAGUIRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 2524;
                                                                                                                                                                                                                                                                      EGF-LIKE DOMAIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JENKINS
                                                                                                                                                                                                                                                                                                                                                                                                  EARLY EMBRYOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROTEIN).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                        RESULT 10
YLM1_CAEEL
ID YLM1_CAEEL
AC P34375;
DT 01-FEB-1994 (
DT 01-FEB-1994 ()
DT 01-FUB-1994 ()
DT 01-FUB-11994 ()
DT 01-FUB-110AL 1
N D2007.1
                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 9
MT3_MALDO
ID MT3_MALDO
AC 024059;
DT 15-JUL-1998
DT 15-JUL-1998
DT 15-JUL-1998
DE MT2.
COMMALUS DOMES
OC EUKARYOTA;
OC ROSACEAE.
RN [1]
RA REID S.J.,
REID S.J.,
RH PHYSIOL. PI
CC -!- FUNCTI
CC RESUDU
CC -!- SIMILAI
DR EMBL. 10619
KW METAL-BIND;
SQ SEQUENCE
SQ SEQUENCE
           뮍
                                                                                                                                                                                                                                                                                                                                              γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ΩV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STTT
                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 5; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
STRAIN-BRISTOL NZ;

STRAIN-BRISTOL NZ;

WILSON R., AINSCOUGH R., ANDERSON K., BAXNES C., BERKS M.,

WILSON R., AINSCOUGH R., CONNELL M., COPSEY T., COOPER J., COULSON A.

BONRIELD J., BURTON J., CONNELL M., COPSEY T., COOPER A.,

CRAXION M., DEAR S., DU Z., DURBIN R., FAVELLO A., FRASER A.,

FULTON L., GARDNER A., GREEN P., HAWKINS T., HILLER L., JIER M.,

JOHNSTON L., JONES M., KERSHAW J., KIRSTEN J., LAISSTER N.,

LAIREILLE P., LIGHTNING J., LLOYD C., MORTIMORE B., O'CALLAGHAN M.,

PARSONS J., PERCY C., RIFKEN L., ROOPRA A., SAUNDERS D., SHOWNKEEN !

SIMS M., SMALDON N., SMITH A., SMITH M., SONNHAMMER E., STADEN R.,

SULSTON J., THIERRY-MIEG J., THOMAS K., VAUDIN M., VAUGHAN K.,

WATERSON R., WATSON A., WEINSTOCK L., WILKINSON-SPROAT J.,
                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.

REID S.J., ROSS G.S.;

PHYSIOL. PLANTARUM 100:183-189(1997).

-I- FUNCTION: METALLOTHIONEINS HAVE A HIGH CONTENT OF

RESIDUES THAT BIND VARIOUS HEAVY METALLS:

-I- SIMILARITY: BELONGS TO FAMILY 15 IN METALLOTHIONEI

EMBL; U61974; G155853;

METAL-BINDING; METAL-THIOLATE CLUSTER; CHELATION.

SEQUENCE 66 AA; 6930 MW; C906D6EC CRC32;
                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                  CAENORHABDITIS
                                                                                                                                                                       EUKARYOTA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MALUS DOMESTICA (APPLE) (MALUS SYLVESTRIS).
EUKARYOTA; PLANTA; EMBRYOPHYTA; ANGIOSPERMAE; DICOTYLEDONEAE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15-JUL-1998 (REL. 36, CREATED)
15-JUL-1998 (REL. 36, LAST ANOTATION
METALLOTHIONEIN-LIKE PROTEIN TYPE 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1063 CDSAPCKNGGRC
                                                                                                                                                                                                                                                                                                                           σı
                                                                                                                                                                                                                                                                                                                                               w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 CDSSECKSSPRC
                                                                                                                                                                                                                                                                                                                       CDNCDCADSTQC 16
                                                                                                                                                                                                                                                                                                                                             CDSSECKSSPRC 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
7; Conserv
                                                                                                                                                                       METAZOA;
                                                                                                                                                                                                         (REL.
(REL.
(REL.
                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1241
1489
1587
2531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                  ELEGANS
                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AΑ,
                                                                                                                                                                                                        28,
29,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1241
1489
1587
                                                                                                                                                                    ACOELOMATES; NEMATODA;
                                                                                                                                                                                                   , LAST SEQUENCE UPDATE), LAST ANNOTATION UPDAT PROTEIN D2007.1 IN CHE
                                                                                                                                                                                                                                         CREATED)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                59.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             271312
                                                                                                                                                                                                                                                                                                                                                                              .78;
                                                                                                                                                                                                                                                                                                                                                                    Ψ
                                                                                                                                                                                                                                                                                                                                                                              Score 36; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL.
POTENTIAL.
POTENTIAL.
MW; AD71189B
                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 44; DB
Pred. No. 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                    N UPDATE)
IN CHROMOSOME
                                                                                                                                                                                                                                                              111 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               66
                                                                                                                                                                                                                                                                                                                                                                              18;
                                                                                                                                                                                                                                                                                                                                                                                        BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                       METALLOTHIONEIN SUPERFAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A
                                                                                                                                                                SECERNENTEA; RHABDITIDA
                                                                                                                                                                                                                                                                                                                                                                                        1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ۳.
                                                                                                                                                                                                                                                                                                                                                                 4.
                                                                                                                                                                                                                                                                                                                                                                                       Length 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 2531;
                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CYSTEINE
```

0;

Gaps

0,

Α.

æ.

ROSALES

```
RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLA RESOLUCIA RESO
        밁
                               Ş
                                                           Query Match
Best Local S
Matches 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SO DR DR RA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTPO
                                                                                                                                                                                   DOMAIN
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WOHLDMAN P.;
NATURE 368:32-38(1994).
EMBL; L16560; G289668; -.
PIR; S44787; S44787.
WORMPEP; D2007-1; CE00126.
HYPOTHETICAL PROTEIN.
SEQUENCE 111 AA; 12037 M
                                                                                                                               SEQUENCE
                                                                                                                                             METAL
METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE: 97079279.

MEDLINE: 97079279.

MEDLINE: 97079279.

PEDERSEN S.N., PEDERSEN K.L., HOEJRUP P., DEPLEDGE M.H., KNUDSE BIOCHEM. J. 319:999-1003(1996).

1 FUNCTION: METALLOTHIONEINS HAVE A HIGH CONTENT OF CYSTEINE RESIDUES THAT BIND VARIOUS HEAVY METALS. CLASS I MTS IN CRU ARE INVOLVED IN THE SEQUESTRATION OF ELEVATED LEVELS OF HEAVE ARE INVOLVED IN THE SEQUESTRATION OF ELEVATED LEVELS OF HEAVE
                                                                                                                                                                                                                                                                                                                                                                                                                          METAL-BINDING;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MT_POTPO P55952;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     POTAMON POTAMIOS.
EUKARYOTA; METAZOA; ARTHROPODA; CRUSTACEA; NOT YET CLASSIFIED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOV-1997 (REL. 35, CREATED)
01-NOV-1997 (REL. 35, LAST SEQUENCE UPDATE)
01-NOV-1997 (REL. 35, LAST ANNOTATION UPDAT
METALLOTHIONEIN (MT).
       12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE=MIDGUT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1997
01-NOV-1997
                                 ω
3 CDSSECKSSPRC 14
|: :||::|
2 CEEGKCKAGCKC 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                            INDUCTION: BY CADMIUM.

MASS SPECTROMETRY: MW-6156.8; METHOD-MALDI.

SIMILARITY: BELONGS TO FAMILY 3 IN METALLOTHIONEIN SUPERFAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 QHCDSSECKSSPRCK 15 ::| :: ||:| :|:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DQCGNACCKTSEQCR 105
                                                         Similarity 4; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
5; Conserv
                                                      Conservative
                                                                                                                                            À
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                            6157
                                                                   47.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12037 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                         THIOLATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        50.0%;
                                                                                                                          WW.
                                                  Score 35; DB Pred. No. 23; 5; Mismatches
                                                        5
                                                                                                                        CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
CLUSTER
                                                                                                                                                CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER B.
CLUSTER A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 37; DB
Pred. No. 19;
7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                            ALPHA
                                                                                                                                                                                                                                                                                                                                                                                                                  CLUSTER;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4213E9D9 CRC32;
                                                                                                                                       Þ
                                                              DB 23;
                                                                                                                        CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                58
                                                                                                                                                                                                                                                                                                                                                                                                                  CHELATION; CADMIUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
19;
                                                                            ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
                                                  ÿ
                                                                            Length 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 111;
                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IN CRUSTACEA
OF HEAVY-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KNUDSEN J.;
                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
 RESULT
```

```
TRANSMEM
DOMAIN
CARBOHYD
CARBOHYD
DISULFID
LIPID
            SEQUENCE
                                                                                                                                                  TRANSMEM
DOMAIN
                                                                                                                                                                                           DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                    MULTIGENE
DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                            GCRDB; GCR_0253;
GCRDB; GCR_0551;
GCRDB; GCR_0708;
                                                                                                                                                                                                                                                         DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                 -1- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN.
-1- TISSUE SPECIFICITY: WHITE AND BROWN ADIPOSE TISSUES.
-1- SIMILARITY: BELONGS TO FAMILY 1 OF G-PROTEIN COUPLED RECEPTORS.
EMBL; X7286; G298113; -
EMBL; X60438; G50110; -
EMBL; S60438; G50110; -
EMBL; S53290; G263087; -
EMBL; S53290; G263087; -
PIR; S32804; S32804.
                                                                                                                                   TRANSMEM
                                                                                                                    DOMAIN
                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                              MGD; MGI:87939; ADRB3
PROSITE; PS00237; G_P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JLT 12
R_MOUSE
B3AR_MOUSE
P25962;
P25962;
01-MAY-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-MAY-1992 (REL.
01-FEB-1994 (REL.
15-JUL-1998 (REL.
BETA-3 ADREMERGIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE-ADIPOSE TI
MEDLINE; 93125503
GRANNEMAN J.G., L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 378-400 FROM TISSUE-ADIPOSE TISSUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VAN SPRONSEN A.,
STROSBERG A.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE: 92037534.

MEDLINE: 92037534.

NAHMIAS C., BLIN N., ELALOUF
EMORINE L.J.;
EMBO J. 10:3721-3727(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EUR. J. BIOCHEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REVISIONS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MUS MUSCULUS (MOUSE).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; MAMMALIA;
EUTHERIA; RODENTIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-SWISS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADRB3 OR ADRB3R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NNEMAN J.G., LAHNERS K.N., RAO D.D.;

PHARMACOL. 42:964-970(1992).

PHARMACOL. 42:964-970(1992).

FUNCTION: BETA-ADRENERGIC RECEPTORS MEDIATE THE CATECHOLAMINE-INDUCED ACTIVATION OF ADENYLATE CYCLASE THROUGH THE ACTION OF GPROTEINS. BETA-3 IS INVOLVED IN THE REGULATION OF LIPOLYSIS AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3, SEQUENCE FROM N.A. 93279311.
            400
                                                                                                                                                                                                                                         37
61
70
89
            Ä,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMORINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MORINE L.J.;
213:1117-1124(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAHMIAS C., KRIEF S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RECEPTOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             36,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ELALOUF J.M., MATTEI M.-G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CREATED)
LAST SEQUENCE UF
LAST ANNOTATION
         MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N.A.
POTENTIAL.

POTENTIAL.

BY SIMILARITY.

BY ALMITATE (BY SIMILARITY).

W; 474A95AC CRC32;
                                                                        6 (POTENTIAL).
EXTRACELLULAR (POTENTIAL).
7 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                                                                                            EXTRACELLULAR (POTENTIAL)
5 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
6 (POTENTIAL).
                                                                                                                                                                                                       EXTRACELLULAR (POTENTIAL).
3 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                     4 (POTENTIAL
                                                                                                                                                                                                                                                                 CYTOPLASMIC
                                                                                                                                                                                                                                                                                          TION; LIPOPROTEIN; PALMITA EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                    (POTENTIAL)
                                                                                                                                                                                                                                                                              (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BRIEND-SUTREN M.-M.,
                                                                                                                                                                                                  (POTENTIAL).
                                                                                                                                                                                                                                                              (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                       GLYCOPROTEIN;
                                                                                                                                                                                                                                                                                                          PALMITATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STROSBERG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A.D.
```

```
THE FIRST TREET TO SO ON THE FIRST TREET TO SO ON THE FIRST TREET 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 13
B3AR_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local s
Matches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-MAY-1992 (REL. 22, CREATED)
01-JUN-1994 (REL. 29, LAST SEQUENCE UPD)
01-NOV-1997 (REL. 35, LAST ANNOTATION UI
BETA-3 ADRENERGIC RECEPTOR.
ADRESS OR ADRESS.
RATTUS NORVEGICUS (RAT).
EUKARYOTA: METAZOA; CHORDATA; VERTEBRATI
                                                              TRANSMEM DOMAIN
                                                                                                         TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN.
-!- TISSUE SPECIFICITY: WHITE AND BROWN ADIPOSE TISSUES.
-!- SIMILARITY: BELONGS TO FAMILY 1 OF G-PROTEIN COUPLED RECEPTORS.
EMBL; M74716; G202766; -.
EMBL; S73473; G241216; -.
EMBL; S75491; G298307; -.
EMBL; S56401; G298307; -.
EMBL; S56152; G298309; -.
PIR; A41679; A41679.
PIR; S29808: S29808.
PIR; S29808: S29808.
                                                                                                                                                                     TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
MEDLINE; 92084710.
MUZZIN P., REVELLI J.-P., KUHNE F., GOCAYNE
VENTER J.C., GIACOBINO J.-P., FRASER C.M.;
J. BIOL. CHEM. 266:24053-24058(1991).
                                         TRANSMEM
                                                                                                                                                                                                                   TRANSMEM
                                                                                                                                                                                                                                                                                                                                                    G-PROTEIN COUPLED MULTIGENE FAMILY;
                                                                                                                                                                                                                                                                                                                                                                                              GCRDB; GCR_0732; · PROSITE; PS00237;
                                                                                                                                                                                                                                                                                                                                                                                                                                       GCRDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BENSAID M., KAGHAD M., RODRIGUEZ M., LE FUR G., CAPUT D.;
FEBS LETT. 318:223-226(1993).
-!- FUNCTION: BETA-ADRENERGIC RECEPTORS MEDIATE THE CATECHOLAMINE-
INDUCED ACTIVATION OF ADENYLATE CYCLASE THROUGH THE ACTION OF G
PROTEINS. BETA-3 IS INVOLVED IN THE REGULATION OF LIPOLYSIS AND
THERMOGENESIS.
                    DOMAIN
                                                                                                                                                     DOMAIN
                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                 TRANSMEM
                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCRDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GRANNEMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EUTHERIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B3AR_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4 DSSECKSSPRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NEMAN J.G., LAHNERS K.N., CHA
PHARMACOL. 40:895-899(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EAQECHSNPRC 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               92100057.
N J.G., LA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              93178631.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RODENTIA.
                                    37
61
70
109
131
153
176
201
223
312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                37; G_PROTEIN_RECEPTOR; 1.

LED RECEPTOR; TRANSMEMBRANE; GLYCOPROTEIN;
LLY PHOSPHORYLATION; LIPOPROTEIN; PALMITATE.

36 EXTRACELLULAR (POTENTIAL).

60 1 (POTENTIAL).

60 CYTOPLASMIC (POTENTIAL).

108 2 (POTENTIAL).

108 2 (POTENTIAL).

119 108 EXTRACELLULAR (POTENTIAL).

130 3 (POTENTIAL).

152 CYTOPLASMIC (POTENTIAL).

154 (POTENTIAL).

175 4 (POTENTIAL).

175 4 (POTENTIAL).

176 220 EXTRACELLULAR (POTENTIAL).

177 (POTENTIAL).

181 6 (POTENTIAL).

289 CYTOPLASMIC (POTENTIAL).

280 EXTRACELLULAR (POTENTIAL).

281 EXTRACELLULAR (POTENTIAL).

282 CYTOPLASMIC (POTENTIAL).

283 EXTRACELLULAR (POTENTIAL).

284 EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   54
54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2.7%;
             CYTOPLASMIC
                                    7 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHAUDHRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERTEBRATA; TETRAPODA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    UPDATE;
           (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .
D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                                                                                             PALMITATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 400;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MCCOMBIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MAMMALIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ε
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
```

```
RESULT TRA8_PSESH TRA8_PSESH 74607;
     Ş
                                                                                                                                                                                                                                                     뮍
                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local s
Matches 6
                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                       Query Match
Best Local :
                                                                                                                                                                                    L_COFAR
MT1_COFAR
P43396;
                                                                                                                                                                                                                                                                                                                                                                          MEDLINE; 91260445.

ROMANTSCHUK M., RICHTER G.Y., M.

MOL. MICROBIOL. 5:617-622(1991)
-!- FUNCTION: INVOLVED IN THE T.

SEQUENCE.
-!- CAUTION: IT IS UNCERTAIN WHI

INITIATOR.

EMBL; X57269; G45831; -.
SEQUENCE FROM N.A.

STRAIN-CV. GUATEMALAN; TISSUE-LEAF;

MOISYADIS S. STILES J.I.;

SUBMITTED (JUN-1994) TO EMBL/GENBANK/DDBJ DATA BANKS.

- FUNCTION: METALLOTHIONEINS HAVE A HIGH CONTENT OF CYSTEINE RESIDUES THAT BIND VARIOUS HEAVY METALS.

-!- SIMILARITY: BELONGS TO FAMILY 15 IN METALLOTHIONEIN SUPERFAMILY.

EMBL; U11423; G508296; -.
                                                                                                                                                      01-NOV-1995
01-NOV-1995
01-NOV-1997
                                                                                                         COFFEA ARABICA (COFFEE).
EUKARYOTA; PLANTA; EMBRYOPHYTA;
                                                                                                                                         01-NOV-1995 (REL. 32, CREATED)
01-NOV-1995 (REL. 32, LAST SEQUENCE UPDATE)
01-NOV-1997 (REL. 35, LAST ANNOTATION UPDAT
METALLOTHIONEIN-LIKE PROTEIN 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P24607;
01-MAR-1992
01-MAR-1992
01-JUN-1994
                                                                                                                                 METAL1.
                                                                                                                                                                                                                                                                                                                                                                   EMBL;
PIR; S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
DISULFID
LIPID
CONFLICT
SEQUENCE
                                                                                                 GENTIANALES; RUBIACEAE.
                                                                                                                                                                                                                                                                                                                                            PIR; S15163; S15163.
TRANSPOSABLE ELEMENT; TRANSPOSITION; DNA-BINDING; SEQUENCE 410 AA; 46980 MW; B02CD432 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-MAR-1992 (REL. 21, CREATED)
01-MAR-1992 (REL. 21, LAST SEQUENCE UPDATE)
01-UN-1994 (REL. 29, LAST ANNOTATION UPDATE)
TRANSPOSASE FOR INSERTION SEQUENCE ELEMENT IS801.
PSEUDOMONAS SYRINGAE (PV. PHASEOLICOLA).
                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=LR781;
MEDLINE; 9126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PSEUDOMONADACEAE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROKARYOTA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       182
                                                                                                                                                                                                                                                    78
                                                                                                                                                                                                                                                                      3 CDSSECKSSPRC 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4 DSSECKSSPRC
                                                                                                                                                                                                                                                   CNTCHCRACPSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EAQECHSNPRC 192
                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity 54.16; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26
107
358
334
400
                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GRACILICUTES;
                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14
                                                                                                                                                                                                                                                   89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26
186
358
358
235
43146
                                                                                                                                                                                                                                                                                                    52.7%;
33.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        52.
54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SCOTOBACTERIA; AEROBIC RODS AND COCCI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₩.
                                                                                                                                                                                                                                                                                          Score 39; DB
Pred. No. 24;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POTENTIAL.
BY SIMILARITY.
BY SIMITA (BY SIMI)
PALMITATE (BY SIMI)
LL -> FV (IN REF.
LL -> FV (ZREATE)
LL -> FV (ZREATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 39; DB
Pred. No. 24;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                 WHETHER
                                                                                                                                                                                                                                                                                                                                                                                                                                         MUKHOPADHYAY P.,
                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                    TRANSPOSITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                          ANGIOSPERMAE;
                                                                                                                                                                                                                                                                                                                                                                                                 MET-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               410
                                                                                                                                                                                             80
                                                                                                                                                                                                                                                                                                     DB
24;
                                                                                                                                                                                             A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                OR.
                                                                                                                                                                                                                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                     ဝှု
                                                                                                          DICOTYLEDONEAE;
                                                                                                                                                                                                                                                                                                                                                                                                VAL-100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ņ
                                                                                                                                                                                                                                                                                                              Length 410
                                                                                                                                                                                                                                                                                                                                                                                                                    THE INSERTION
                                                                                                                                                                                                                                                                                                                                                                                                                                         MILLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 400;
                                                                                                                                                                                                                                                                                                                                                        DNA
                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                         D.:
                                                                                                                                                                                                                                                                                                                                                                                               SI
                                                                                                                                                                                                                                                                                                                                                       RECOMBINATION
                                                                                                                                                                                                                                                                                                                                                                                                THE
                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

Search completed: May 3, 1999, 16:05:43 Job time: 4002 sec	Query Match 47.3%; Score 35; DB 1; Length 80; Best Local Similarity 41.7%; Pred. No. 28; Matches 5; Conservative 4; Mismatches 3; Indels Qy 4 DSSECKSSPRCK 15 :: : Db 62 ENGGCKCGPDCK 73	KW METAL-BINDING; METAL-THIOLATE CLUSTER; CHELATION. SQ SEQUENCE 80 AA; 7914 MW; BB8060AE CRC32;
	0,	

THIS PAGE BLANK (USPTO)

1

pennisetum pennisetum pennisetum drosophila pennisetum

```
protein search, using sw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-037-460-2_COPY_30_44
74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the number of results predicted by chance to have a r than or equal to the score of the result being printed, ed by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 4.5
Copyright (c) 1993 - 1998 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sp_vertebrate:*
sp_unclassified:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sp_invertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3, 1999, 17:54:22; Search time 47.06 Seconds (without alignments)
17:585 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     55169189
                                                                          Q25464
Q15699
Q15699
Q2070
Q40630
Q40630
Q40630
Q40636
Q04364
Q38254
Q76956
Q81530
Q76956
Q81530
Q76898
Q43612
Q43612
Q43612
Q43612
Q456895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q15330
) P97682
Q52156
2 Q57462
065885
Q48772
Q24774
                                                                                                                                                                                                                                                                                                                                                                                                                                                               070432
Q52067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mode1
                   915330 homo sapien
P97682 rattus norv
052156 pseudomonas
057462 brachydanio
065885 rubus idaeu
048772 arabidopsis
070432 meriones un
052067 enterobacte
025464 mytilus gal
016609 homo sapien
092070 gallus gall
040630 oryza sativ
018190 ceanorhabdi
023938 fragaria ve
004364 oryza sativ
018190 ceanorhabdi
023938 inmbricus c
076953 lumbricus c
076953 lumbricus c
076953 lumbricus c
025163 haemadipsa
076956 lumbricus r
081530 mesembryant
056898 yersinia en
043612 pennisetum
016895 caenorhabdi
026799 methanobact
043722 pennisetum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q15330 homo sap
P97682 rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Description
                   RR RR OCC OCC DIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT Q153301 ID 2301 ID 2301 ID 2301 ID 201 O11 DI 201 O11 DI 201 O11 DI 201 O11 DI 201 O11 DI 201 O11 DI 201 O11 DI 201 O11 DI 201 O11 DI 201 O11 DI 201 O11 DI 201 O11 DI 201 O11 DI 201 DI
                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q15330

PRELICATION
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q15330;
Q1
                                                                                                                                                                                    P97682;
P97682;
01-MAY-1997
01-MAY-1997
01-MAY-1997
PG25;
SEQUENCE FROM N.A.
STRAIN-SPRAGUE DAWLEY; TISSUE-PINEAL GLAND;
WANG X., BROWNSTEIN M.J., YOUNG W.S.;
SUBMITTED (DEC-1996) TO EMBL/GENBANK/DDBJ DATA BANKS.
                                                                                            RATTUS NORVEGICUS (RAT).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; MAMMALIA; EUTHERIA; RODENTIA;
SCIUROGNATHI; MURIDAE; MURINAE; RATTUS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIGNAL.
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.

MEDLINE; 96355375.

LASSALLE PM., MOLET S., JANIN A., VANDER-HEYDEN J.E., TAVERNIER J.,
FIERS W., DEVOS R.E., TONNEL A.E.B.;
"ESM-1 is a novel human endothelial cell-specific molecule expressed in lung and regulated by cytokines.";
J. BIOL. CHEM. 271:20458-20464(1996).

EMBL; X89425; E189266; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30
                                                                                                                                                                                                                                                                                                                                                                                                                                     1 QHCDSSECKSSPRCK 15
                                                                                                                                                                                                                                                                                                                                                                                               QHCDSSECKSSPRCK 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PF00219; IGFBP; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                  7 (TREMBLREL.
7 (TREMBLREL.
7 (TREMBLREL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           184
                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19
184
20095 þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       03,03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                043805
043806
043807
043808
07691376
045563
045563
049563
049563
076957
076957
076955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL.
ESM-1 SECRETORY PROTEIN.
08D109DF CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 74; DB 2;
Pred. No. 0.0001;
Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ALIGNMENTS
                                                                                                                                                                                                                                                                                   184 AA
                                                                                                                                                                                             UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   070553 mus músculu
076957 lumbricus t
055139 mus musculu
008883 mus musculu
076955 lumbricus r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q90844 gallus gall
Q24438 drosophila
Q41766 zea mays (m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q00867 fusarium so
Q91376 xenopus lae
O45563 caenorhabd1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q43805
Q43806
Q43807
Q43808
Q76917
```

Result No.

Match Query

Length

В

Pred. No. is t

6: 7: 8: 9: 10: 11: 12: 13:

sp_bacteria:*
sp_rodent:*

sp_organelle:*
sp_phage:*
sp_plant:*

is

derived

12 8 8 10 9

0

Gaps

0

28486833378

Database :

SPTREMBL_8:*

1: sp_fungi:
2: sp_human:
3: sp_invert
4: sp_mammal
5: sp_mhc:*

sp_tungi:*

sp_mammal:* sp_human:* Scoring table: Sequence: Perfect score:

PAM150 180763 seqs,

QHCDSSECKSSPRCK 15

Run 8

protein ą.

```
RESULTA

OBJECT

OBJEC
            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SS DR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
SEQUENCE FROM N.A.
MEDLINE; 98165392.
APPEL B., EISEN J.S.;
APPEL B., EISEN J.S.;
APPEL B., TEISEN J.S.;
TREGULATION of neuronal specification in Delta function.";
DEVELOPMENT 125:371-380(1998).
EMBL; AF030031; G2809389; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 79.7
Best Local Similarity 66.7
Matches 10; Conservative
                                                                                                                                                  DELIAA.

BRACHYDANIO RERIO (ZEBRAFISH) (ZEBRA D.

BRACHYDANIO RERIO (ZEBRAFISH) (ZEBRA D.

EUKARYOTA; METAZOA; CHORDATA; VERTEBRA'

TELEOSTEI; EUTELEOSTEI; OSTARIOPHYSI;

CYPRINIDAE; RASBORINAE; DANIO.
                                                                                                                                                                                                                                                                                              057462;
057462;
01-JUN-1998
01-JUN-1998
01-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q52156;
Q52156;
01-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Identification and characterization of a siderophore (pfrA) of Pseudomonas putida WC358: homology to the a regulatory gene algQ of Pseudomonas aeruginosa."; MOL. MICROBIOL. 10:63-73(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUBMITTED (FEB-1994) TO EMBL/GENBANK/DDBJ DATA BANKS EMBL; X75771; G455422; -. SEQUENCE 157 AA; 18015 MW; 025EDF95 CRC32;
                                                                                                                                                                                                                                                                                 DELTAA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. STRAIN=WCS398;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE; 95058183.
VENTURI V., OTTEVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A. STRAIN-WCS398;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PSEUDOMONAS PUTIDA.
BACTERIA; PROTEOBACTERIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PSEUDOMONAS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 QHCDSSECKSSPR 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 QHCDSSECKSSPRCK 15 : | | | : | | | | | | |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DHCEKGECKDPER 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EHCDNTECRSSLRCK 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity 6; Conserv
                                                                                                                                                                                                                                                                                                  (TREMBLREL. (TREMBLREL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (TREMBLREL.)
(TREMBLREL.)
(TREMBLREL.)
REGULATORY G
                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         G1750198; -.
4 AA; 20075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          56.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       79.78;
66.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENE
                                                                                                                                                                                                                                                                                                  86,
86,
86,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAMMA SUBDIVISION; PSEUDOMONAS GROUP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           , WM
                                                                                                                                                                                                                                                                                              CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 42; DB
Pred. No. 7.4;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LAST SEQUENCE UI LAST ANNOTATION PFRA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CREATED)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 59; DB Pred. No. 0.02 4; Mismatches
                                                                                                                                                                                (ZEBRA DANIO).

VERTEBRATA; ACTINOPTERYGII; NEOPTERYGII;
IOPHYSI; CYPRINIFORMES; CYPRINOIDEA;
                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3457564C CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                  802
                                                                    ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB .
1.02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                UPDATE)
                                                                  zebrafish
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 157;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              e regulatory gene
alginate
                                                                  spinal cord
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                δĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

```
RESULT
048772
                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
065885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SSER
                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                          048772 PRELIMINARY;
048772;
01-JUN-1998 (TREMBLREL, 0
01-JUN-1998 (TREMBLREL, 0
01-AUG-1998 (TREMBLREL, 0
HYPOTHETICAL PROTEIN.
STRAIN-CV. COLUMBIA;
ROUNSLEY S.D., LIN X., KETCHUM K.A., CROSBY M.L
SYKES S.M., KAUL S., MASON T.M., KERLAVAGE A.R.
SOMERVILLE C.R., VENTER J.C.;
SUBMITTED (DEC-1997) TO EMBL/GENBANK/DDBJ DATA;
EMBL; AC003033; G2702272;
SEQUENCE 453 AA; 49747 MW; C339A73A CRC32;
                                                                                                         ARABIDOPSIS THALIANA (MOUSE-EAR CRESS).
ARABIDOPSIS THALIANA (MOUSE-EAR CRESS).
EUKARYOTA; VIRIDIPLANTAE; CHAROPHYTA/EMBRYOPHYTA GROUP; EMBRYOPHYTA;
TRACHEOPHYTA; EUPHYLLOPHYTES; SPERMATOPHYTA; MAGNOLIOPHYTA;
EUDICOTYLEDONS; ROSIDAE; CAPPARALES; BRASSICACEAE; ARABIDOPSIS.
                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
STRAIN-CV. GLEN CLOVA; TISSUE-FRUIT;
JONES C.S., DAVIES H.V., MCNICOL R.J., TAY
SUBMITTED (FEB-1998) TO EMBL/GENBANK/DDBJ
EMBL; AJ224146; E1294427;
SEQUENCE 63 AA; 6562 MW; F32B1F6B CRC3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      065885 PRELIMINARY; PRT; 63 AA.
065885; PRELIMINARY; PRT; 63 AA.
01-AUG-1998 (TREMBLREL 07, CREATED)
01-AUG-1998 (TREMBLREL 07, LAST SEQUENCE UPDATE)
01-AUG-1998 (TREMBLREL 07, LAST ANNOTATION UPDATE)
                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RUBUS IDAEUS.

EUKARYOTA; VIRIDIPLANTAE; CHAROPHYTA/EMBRYOPHYTA GROUP; EMBRYOPHYTA;

TRACHEOPHYTA; EUPHYTLLOPHYTES; SPERMATOPHYTA; MAGNOLIOPHYTA;

EUDICOTYLEDONS; ROSIDAE; ROSALES; ROSACEAE; RUBUS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE; PS01186; EGF_2; GLYCOPROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               METALLOTHIONEIN-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          447 DHCSSSPCSNGARC
                                                                                                                                                                                                                                                                                                     σ
                                                                                                                                                                                                                                                                                                                           3 CDSSECKSSPRC 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 QHCDSSECKSSPRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       G
                                                                                                                                                                                                                                                                                                    CDSCDCSDASQC
                                                                                                                                                                                                                                                                                                                                                    5; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    802 AA;
                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    88941 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   50.0%;
                                                                                                                                                                                      9,8,8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          80
                                                                                                                                                                                                                                                                                                                                                  Score
Pred.
4; Mis
                                                                                                                                                                                     CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                F32B1F6B CRC32;
                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 45; 1
Pred. No. 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   42F041BD CRC32;
                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                  .A., CROSBY M.L., KERLAVAGE A.R.,
                                                                                                                                                                                                                                                                                                                                                             No.
                                                                                                                                                                                                                                       453
                                                                                                                                                                                                                                                                                                                                                                                                                                     TAYLOR M.A.;
DBJ DATA BANK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
7.5;
                                                                                                                                                                                                                                      ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ω
••
                                                                                                                                                                                                                                                                                                                                                                         Length 63;
                                                                                                                                                                                                                                                                                                                                                                                                                                         BANKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 802;
                                                  ADAMS
                                                               BRANDON R.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

Query Match Best Local S Matches 6

Similarity 46.
6; Conservative

56.8%;

Score 42; DB Pred. No. 17; 4; Mismatches

DB 17;

8

Length 453

Indels

0

Gaps

9

δÃ

CDSSECKSSPRCK

15

```
RESULT ID 20247774 ID AC OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR OCCUPATOR O
                                                                                                                                                                                                                                                                                                                                                                   RESULT
Q52067
ID Q5
AC Q5
                                                                                                                                                   밁
                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local s
Matches 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q24774;
Q24774;
Q24774;
Q1-NOV-1996 (TREMBLREL. 01, C
01-NOV-1996 (TREMBLREL. 01, L
01-NOV-1998 (TREMBLREL. 08, L
Q52067
Q52067;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              O70432 PRELIMINARY; PRT; 167 AA.
O70432;
O1-AUG-1998 (TREMBLREL. 07, CREATED)
O1-AUG-1998 (TREMBLREL. 07, LAST SEQUENCE UPDATE)
O1-AUG-1998 (TREMBLREL. 07, LAST ANNOTATION UPDATE)
BETA-3-ADRENERGIC RECEPTOR (FRAGMENT).
BETA-3-ADRENERGIC RECEPTOR (FRAGMENT).
BETA-3-ADRENERGIC RECEPTOR (FRAGMENT).
BETA-3-ADRENERGIC RECEPTOR (FRAGMENT).
BETA-3-ADRENERGIC RECEPTOR (FRAGMENT).
BETA-3-ADRENERGIC RECEPTOR (FRAGMENT).
BETA-3-ADRENERGIC RECEPTOR (FRAGMENT).
BETA-3-ADRENERGIC RECEPTOR (FRAGMENT).
BETA-3-ADRENERGIC RECEPTOR (FRAGMENT).
BETA-3-ADRENERGIC RECEPTOR (FRAGMENT).
BETA-3-ADRENERGIC RECEPTOR (FRAGMENT).
BETA-3-ADRENERGIC RECEPTOR (FRAGMENT).
BETA-3-ADRENERGIC RECEPTOR (FRAGMENT).
BETA-3-ADRENERGIC RECEPTOR (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CYSECTION,";
earthworm.";
J. BIOL. CHEM. 269:24688-24691(1994).
EMBL; X79344; G488803; -.
EMBL; X79344; G488803; -.
SROUENCE 251 AA; 25000 MW; 85747E
                                                                                                                                                                                                                                                                                                                                                                                               NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                            WANGEMANN P., LIU J., SHIMOZONO M., SCOFIELD M.A.; SUBMITTED (MAR-1998) TO EMBL/GENBANK/DDBJ DATA BANKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ENCHYTRAEUS BUCHHOLZI.
EUKARYOTA; METAZOA; ANNELIDA; CLITELLATA; OLIGOCHAETA; HAPLOTAXIDA;
TUBIFICINA; ENCHYTRAEIDAE; ENCHYTRAEUS.
                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AF055351; G3025850;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WILLUHN J., SCHMITT-WREDE H.P., GREVEN H., "CDNA cloning of a cadmium-inducible mRNA cysteine-rich, non-metallothionein 25-kDa |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SCIUROGNATHI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. MEDLINE; 95014230.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CYSTEINE-RICH-PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 223
                                                                                                                                                   7
                                                                                                                                                                                              4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 CDSSECKSSPRCK 15
                                                                            ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          œ
                                                                                                                                              EAQECHSNPRC
                                                                                                                                                                                            DSSECKSSPRC 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDNVNCKCGSSCR 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |::: || :| ||
CETGACKYGPTCK 106
                                                                                                                                                                                                                                         6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
5; Conserv
                                                                                                                                                                                                                                                                                                                                                                      167
167 i
                                                                                                                                                                                                                                            Conservative
                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MURIDAE;
                                                                                                                                                                                                                                                                                                                                                                      AA;
                                                                                                                                                   17
                                                                                                                                                                                                                                                                                                                                                                                             167
                                                                                                                                                                                                                                                                                                                                                                 18324 MW;
                                                                                                                                                                                                                                                                   52.7%;
54.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    54.1%;
38.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GERBILLINAE; MERIONES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                   Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 40; DB
Pred. No. 22;
5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ű
                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                 B187BF5E CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    85747E80 CRC32;
                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                     ö
.
                                                                                                                                                                                                                                                                                       39;
                      112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      251
                                                                                                                                                                                                                                                                                       DB
                      ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ., WUNDERLICH F.;
A encoding a novel
a protein in an er
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                                                                                                                                                                                                                          10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 251;
                                                                                                                                                                                                                                                                                     Length 167;
                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                novel
an en
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                enchytraeid
                                                                                                                                                                                                                          ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RODENTIA;
                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
밁
                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 6
                           MEDLINE; 95204464.

INOUE K., TAKEUCHI Y., MIKI D., ODO S.;
"Mussel adhesive plaque protein gene is
growth factor-like gene family.";
J. BIOL. CHEM. 270:6598-6701(1995).
EMBL; D43794; 6502768; -
PROSITE; PS01186; EGF_2; 10.
PFAM; PF00008; EGF; 11.
  SIGNAL;
SIGNAL
CHAIN
                                                                                                                                                                    Q25464 PRELIMINARY; PRT; 473 AA. Q25464; Q1-NOV-1996 (TREMBLREL. 01, CREATED) 01-NOV-1996 (TREMBLREL. 08, LAST SEQUENCE UPDATE) ADHESIVE PLAGUE MATRIX PROTEIN PRECURSOR.
                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                               MYTILUS GALLOPROVINCIALIS
                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
STEIBL R., STEIBL H.D., SIDDAVATTAM D., KLINGMEULLER W.;
STEIBL R., EDS., PP 496-496, KLUWER ACADEMIC PUBLISHERS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-NOV-1996
01-NOV-1996
01-JAN-1998
                                                                                                                                           MYTILIDAE; MYTILUS.
                                                                                                                                                       EUKARYOTA;
                                                                                                                                                                                                                                                                                                                                                                                        SCHWICKERATH O.;
THESIS (1993), DIPLOMA
EMBL; X99694; E256957;
                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                 PLASMID.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A. DEUERLING E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
LECHLER A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
KREUTZER R., STEIBL H.D., DAYANANDA S.,
KLINGMUELLER W.;
                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (IN) NITROGEN FIXATION, POLSINELLI M., MATE EDS., PP 24-26, KLUWER ACADEMIC PUBLISHERS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BACTERIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ENTEROBACTER AGGLOMERANS. PLASMID PEA3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-WOV-1996 (TREMBLEREL 01, CREATED)
01-WOV-1996 (TREMBLEREL 05, LAST SEQUENCE UP
01-JAN-1998 (TREMBLEREL 05, LAST ANNOTATION
PLASMID PEA3 NITROGEN FIXATION GENES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                THESIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENTEROBACTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      THESIS (1993),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (1991).
                                                                                                                                                                                                                                                10
                                                                                                                                                                                                                                                                              99
                                                                                                                                                                                                                                                                            HCESGSCTTSP
                                                                                                                                                                                                                                                                                                HCDSSECKSSP
MATRIX PROTEIN; GLYCOPROTEIN

1 17 POTENTII

18 473 ADHESIVI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R A.;
(1993),
                                                                                                                                                                                                                                                                                                                   Similarity 54.16; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROTEOBACTERIA;
                                                                                                                                                    METAZOA; MOLLUSCA; BIVALVIA; PTERIOMORPHIA;
                                                                                                                                                                                                                                                                                                                                                                      112 AA;
                                                                                                                                                                                                                                                                                                                                                                                         DIPLOMARBEIT, E256957;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       UNIVERSITAET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               UNIVERSITAET
                                                                                                                                                                                                                                                                                              12
                                                                                                                                                                                                                                                                                                                                                                      11986 MW;
                                                                                                                                                                                                                                                                                                                              51.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAMMA SUBDIVISION;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BAYREUTH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BAYREUTH,
                                                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                   UNIVERSITAET
ADHESIVE PLAQUE MATRIX PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                     7C5B0746 CRC32
                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                             NO:
                                                                                          S
                                                                                 ıs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GERMANY
                                                                                                                                                                                                                                                                                                                             DB
23;
                                                                                 þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MATERASSI R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DIPPE
                                                                               novel member of epidermal
                                                                                                                                                                                                                                                                                                                                                                                                   BAYREUTH,
                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DORTRECHT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENTEROBACTERIACEAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽.
                                                                                                                                                                                                                                                                                                                                      Length 112;
                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HALDA L.,
                                                                                                                                                                                                                                                                                                                                                                                                   GERMANY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VINCENZINI M.,
I, BOSTON, LONDON,
                                                                                                                                                    MYTILOIDA;
                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BUCK M.,
                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                 0
```

S

SEQUENCE

473

Ā,

51772 MW;

E6E2CD33 CRC32;

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
Q16609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 5
      EMBL; X7 PROSITE;
                           MEDLINE; 9419452.

MEDLINE; 9419452.

"Cloning and expression of the chicken CD18 cDNA.";

"LEUKOC. BIOL. 55:501-506(1994).

-!- FUNCTION: INTEGRINS ARE A LARGE FAMILY OF CELL SURFACE GLYCOPROTEINS THAT MEDIATE CELL TO CELL & CELL TO MATRIX ADHESION.

-!- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.

-!- SUBCILURAR LOCATION: TYPE I MEMBRANE PROTEIN.

--- CELL-SURFACE RECEPTOR.
                                                                                                                                                                                                                                                                                                 Q92070 PRELIMINARY; PRT; 772 AA.
Q92070;
Q92070;
Q1-NOV-1996 (TREMBLREL. 01, CREATED)
Q1-NOV-1996 (TREMBLREL. 01, LAST SEQUENCE UPDATE)
Q1-NOV-1998 (TREMBLREL. 08, LAST ANNOTATION UPDATE)
Q1-NOV-1998 (TREMBLREL. 08, LAST ANNOTATION UPDATE)
INTEGRIN BETA 2 SUBUNIT (CD18) PRECURSOR (CD18).
GALLUS GALLUS (CHICKEN).
GALLUS GALLUS (CHICKEN).
GALLUS GALLUS (CHORDATA; VERTEBRATA; ARCHOSAUR:
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; ARCHOSAUR:
NEOGNATHAE; GALLIFORMES; PHASIANIDAE; PHASIANINAE;
                                                                                                                                                                                                                                SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
TISSUE=SPLEEN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PYRNE C.D., SCHWARTZ K., LAWN R.M.;

"LOSS of a splice donor site at a 'skipped exon' in a gene homologou to apolipoprotein(a) leads to an mRNA encoding a protein consisting a single kringle domain.";

ARTERIOSCLER. THROMB. VASC. BIOL. 15:65-70(1995).

EMBL; U19518; G642946; -
EMBL; U19517; G642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  016609;
01-NOV-1996
01-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HOMO SAPIENS (HUMAN).
EUKARYOTA; METAZOA; CHORDATA;
CATARRHINI; HOMINIDAE; HOMO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE; 95268939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q16609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (APOARGC).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     86 CKPNQCKNKSRC 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3 CDSSECKSSPRC 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
mes 5; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 CDSSECKSSPRC 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CRNPDCSAGPWC
    X71786; G297567;
E; PS00243; INTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
4; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TREMBLREL.)
(TREMBLREL.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
INTEGRIN_BETA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   51.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               55.4%;
41.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  , 10
10
10
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 38; DB
Pred. No. 26;
6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ć,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CREATED)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>ა</u>
                                                                                                                                                                                                                                                                                                                                 VERTEBRATA; ARCHOSAURIA; AVES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 41;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERTEBRATA; MAMMALIA; EUTHERIA; PRIMATES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
  N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                            PHASIANINAE; GALLUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 473;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene homologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        e
f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
Query Match
Best Local Similarity
""" hes 6; Conserv.
                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                      RESULT
042347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOSO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 6
                                                                                                                           Q40630 PRELIMINARY;
Q40630;
Q1-NOV-1996 (TREMBLREL 0
01-NOV-1998 (TREMBLREL 0
01-NOV-1998 (TREMBLREL 0
                                                                                                                                                                                                                                                                                                                                "Isolation of a novel chick homolog of s with C-Notch-1 in chick development."; INT. J. DEV. BIOL. 40:1089-1096(1996). EMBL: D87558; D1022568; -. PROSITE; PS01186; EGF_2; 10. PROSITE: PS01187; EGF_CA; 8. PFAM; PF00008; EGF; 14. GLYCOPROTEIN; EGF-LIKE DOMAIN. NON_TER 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 042347;
01-JAN-1998 (TREMBLREL 05, CRE
01-JAN-1998 (TREMBLREL 05, LAS'
01-NOV-1998 (TREMBLREL 08, LAS'
C-SERRATE-2 (FRAGMENT).
GALLUS GALLUS (CHICKEN).
EUKARYOTA; METAZOA; CHORDATA; V
                                                                      ORYZA SATIVA (RICE).

EUKARROTA; VIRIDIPLANYAE; CHAROPHYTA/EMBRYOPHYTA GROUP; EMBRYOPHYTA;

TRACHEOPHYTA; EUFHYLLOPHYTES; SPERMATOPHYTA; MAGNOLIOPHYTA; LILIOPSIDA;
                  MCGONIGLE B., PLANT PHYSIOL.
                                   TISSUE-CALLUS;
                                                SEQUENCE FROM N.A.
                                                                                                                      OSMOTIN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                     NON_TER
SEQUENCE
                                                                    POALES;
                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. MEDLINE; 97184054.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PFAM; PF00362; integrin_B; 1.
SIGNAL; INTEGRIN; CELL ADHESION; TRANSMEMBRANE;
SIGNAL 24 POTENTIAL.
CHAIN 25 772 POTENTIAL.
SEQUENCE 772 AA; 85368 MW; 474ABB7C CRC32;
                                                                                                                                                                                                                           472 CESNPCQNGGRCK 484
                                                                                                                                                                                                                                                                                                                                                                                                                                 HAYASHI H., MOCHII M., KODAMA R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NEOGNATHAE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            042347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              557 RCDCGECKCTPK 568
                                                                                                                                                                                              14
                                                                                                                                                                                                                                                 w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 HCDSSECKSSPR 13
                                                                                                                                                                                                                                              CDSSECKSSPRCK
                                                                    POACEAE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity 6; Conserv
                                                                                                                                                                                                                                                                                                                    1212 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GALLIFORMES;
                                                                                                                                                                                                                                                                    Conservative
                LAI L.B., NELSON T.;
. 111:1354-1354(1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                     ORYZA.
                                                                                                                                                                                                                                              15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    772 E
85368 MW;
                                                                                                                                                                                                                                                                                                                    134188 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             56.8%;
50.0%;
                                                                                                                                                                                                                                                                            .18;
                                                                                                                              01,01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DATA; VERTEBRATA; ARCHOSAURIA;
PHASIANIDAE; PHASIANINAE; GALI
                                                                                                                             LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                   CREATED)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDAT
                                                                                                                                                                                                                                                                           Score 43;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 42;
Pred. No.
                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POTENTIAL.
; 474AB87C CRC32;
                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                  0ECF076C CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                               HAMADA Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1212
                                                                                                                                                                        218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PHASIANINAE;
                                                                                                                                                                                                                                                                           DB 12;
27;
                                                                                                                                                                                                                                                                                                                                                                                                            Serrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
27;
                                                                                                                                                                        ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                               MIZUNO N., EGUCHI G.,
                                                                                                                                                                                                                                                                  Ψ
                                                                                                                                                                                                                                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ?
                                                                                                                                                                                                                                                                                    Length 1212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 772;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GLYCOPROTEIN;
                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                          its coexpression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AVES;
                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REPEAT
                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

SEQUENCE FROM N.A.

```
Page 5
```

```
Search completed: May
Job time: 644 sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMPANDATION ACCOMP
                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RA WILSON R., AINSCOUGH R., ANDERSON K., BAYNES C., BERKS M., BOWFIELD J.,
RA BURTON J., CONNELL M., COPSEY T., COOPER J., COULSON A., CRAXTON M.,
RA DEAR S., DU Z., DURBIN R., FAVELLO A., FULTON L., GARDNUR A., GREEN M.,
RA HAWKINS T., HILLIER L., JIER, M., JOHNSON L., JONES M., KERSHAW J.,
RA KIRSTEN J., LAISTER N., LATREILLE P., LIGHTNING J., LLOYD C.,
RA KURNARY A., MORTIMORE B., O'CALLAGHAN M., PARSONS J., PERCY C.,
RA RIFKEN L., ROOPRA A., SAUNDERS D., SHOMNKEEN R., SMALDON N., SMITH A.,
RA RIFKEN L., ROOPRA A., SAUNDERS D., SHOMNKEEN R., SMALDON N., SMITH A.,
RA VAUDIN M., VAUGHAN K., WATERSTON R., WATSON A., WEINSTOCK L.,
RT "2.2 Mb of contiguous nucleotide sequence from chromosome III of C.
RT "2.2 Mb of contiguous nucleotide sequence from chromosome III of C.
RT "2.2 Mb of contiguous nucleotide sequence from chromosome III of C.
RT "2.2 Mb of contiguous nucleotide sequence from chromosome III of C.
RT "2.2 Mb of contiguous nucleotide sequence from chromosome III of C.
RT "2.2 Mb of contiguous nucleotide sequence from chromosome III of C.
RT "2.2 Mb of contiguous nucleotide sequence from chromosome III of C.
RT "2.2 Mb of contiguous nucleotide sequence from chromosome III of C.
RT "2.2 Mb of contiguous nucleotide sequence from chromosome III of C.
RT "2.2 Mb of contiguous nucleotide sequence from chromosome III of C.
SQ SEQUENCE 547 AA; 61992 MW; 580Cl2B4 CRC32;
                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 57.1
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SO FIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 52.7%;
Best Local Similarity 30.8%;
Matches 4; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 HCDSSECKSSPRC 14
:|::::| :: ||
* 81 QCQTGDCGGTLRC 93
                                                                                                                                                                                  516 HCDFAEISNFPRCK 529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAENORHABDITIS ELEGANS.
EUKARYOTA; METAZOA; NEMATODA; SECERNENTEA; RHABDITIA; RHABDITIDA;
RHABDITINA; RHABDITOIDEA; RHABDITIDAE; PELODERINAE; CAENORHABDITIS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
MEDLINE; 94150718.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           O18190 PRELIMINARY; PRT; 547 AA.
Q18190;
O1-JAN-1998 (TREMBLREL 05, CREATED).
O1-JAN-1998 (TREMBLREL 05, LAST SEQUENCE UPDATE)
O1-NOV-1998 (TREMBLREL 08, LAST ANNOTATION UPDATE)
W09G3.4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE-CALLUS;

MEDINA J., DAVIS J., QUATRANO R.S.;

SUBMITTED (FEB-1996) TO EMBL/GENBANK/DDBJ DATA BANKS.

EMBL; 176377; G1196835; -

PFAM; PF00311; thaumatin; 1.

NON_TER 1 1

SEQUENCE 218 AA; 22430 MW; C2C0F7D0 CRC32;
                                                                                                                                                                                                                                  2 HCDSSECKSSPRCK 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           218 AA; 22430 MW; C2C0F7D0 CRC32;
                                   Ψ
                                                                                                                                                                                                                                                                                                                                                                         55.4%;
57.1%;
                       1999, 17:54:24
                                                                                                                                                                                                                                                                                                                         Score 41; DB:
Pred. No. 29;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 39; DB 8; Length 218; Pred. No. 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                         DB 3; Length 547;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ?
                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

THIS PAGE BLANK (USPTO)

Title: Perfect score: Sequence:

US-09-037-460-1 1271

CTGCTTCCCACCAGCAAAGA......GTTNCCTNTNTCTNAAGGAC 1271

Run 욧

9:

nucleic

nucleic search, using sw model

GenCore version 4.5 Copyright (c) 1993 - 1998 Compugen Ltd.

May 3, 1999, 21:34:32; Search time 854.75 Seconds (without alignments) 5319.758 Million cell updates/sec

Scoring table:

Database :

GenEmbl: * 808301 seqs, IDENTITY_NUC

1788773984 residues

gb_bal:*
gb_ba2:*

jb_in:*

```
BASE COUNT
ORIGIN
                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                RESULT 1
AR004664
LOCUS
DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                       KEYWORDS
SOURCE
  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      00000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     000000000
                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          42
41./
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62
                                                                                                                                         1 (bases 1 to 1271)
Hastings,G.A. and Rosen,C.A.
Human vascular IBP-like growth factor
Patent: US 5747280-A 1 05-MAY-1998;
Location/Qualifiers
1. .1271
                                                                                                                                                                                                                                                                                               Unknown
                                                                                                                                                                                                                                                                                                                     Unknown.
                                                                                                                                                                                                                                                                                                                                                          AR004664 1271 bp DNA
Sequence 1 from patent US 5747280.
AR004664
g3965543
                                                                                                                                                                                                                                                                            Unclassified
                                                                                                          361
                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="unknown"
246 c 336 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             192126
  99.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DDIDDP2
AF044870
AF044870
2 AC005876
2 AC005876
8 AC004153
CELT0584
0 HS1061208
AE001421
PLRNASSU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC000348
8 AC000348
8 AC000349
PFSC04017
PFSC040168
8 CEW3398C
8 CEY33968-0
8 CEY3968-0
8 CEY3968-0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PFSC03064
PFSC03009
AC005297
PFSC04014
CET14G8
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
CEC47B2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AR004664
0 HSRNAESM1
0 HSRNAESM1
3 RNU80818
166494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 AC005507
CEMYO2
8 AC006101
AC004557
9 AC004557
Score 1264.8;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HUAC002565
HUAC002565
MMMMH461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ALIGNMENTS
                                                                                                        320
                                                                                                        c
                     DB
                   9
                                                                                                                                                                                                                                                                                                                                                                                                                       PAT
                                                                                                      œ
                   Length 1271;
                                                                                                      others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   166494 Sequence 14
ACO02565 Human Chr
ACO02565 Human Chr
ACO02565 Human Chr
ACO02565 Human Chr
AF027865 Mus muscu
ACO02507 *** SEQUE
X08066 Caenorhabdi
ACO06101 *** SEQUE
X08066 Caenorhic s
ACO04557 Genomic s
ACO04557 Genomic s
ACO04557 Genomic s
ACO0458 Genomic s
ACO0468 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 *** SEQUE
Z82066 **** SEQUE
Z82066 ***  SEQUE
Z82066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    U78741 Plasmodium
AJ223281 Manihot e
AJ223281 Manihot e
AF107885 Homo sapi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AR004664 Sequence
X89426 H.sapiens m
X89426 H.sapiens m
U80818 Rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                       04-DEC-1998
```

gb_ro:*
gb_st:*
gb_sy:*
gb_vi:*
gb_vi:*
gb_htg:*
em_ba:*
em_fun:*

gb_pl2:* gb_pr1:* gb_pr2:*

gb_pr3:*

gb_pat:*
gb_ph:*
gb_pl1:*

gb_om:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

em_sts: *
gb_bal: *
gb_pl2: *
gb_pl2: *
gb_pl2: *
gb_pr1: *
gb_pr1: *
gb_pr3: *

em_un: *
em_vi: *
em_htg: *

em_ro:*
em_sy:*

em_ov:*
em_pat:*
em_ph:*

em_or:* em_om:*

em_hum2:*
em_in:*

ß	
ä	
Ś	
₽	
ñ	

Result No. Score Query Match Length DB

Ħ

Description

Matches 1271;

Conservative

0;

61 61

```
GAGACAGGTCAACCAAAGAGGGAACTAGGCAAAGCTGAAGACCGCAGTGAGTCAAATTAG
                                                                                           GAGACAGGTCAACCAAAGAGGGAGCTAGGCAAAGCTGAAGACCGCAGTGAGTCAAATTAG
                                                                                                                                                                      TAAATGTGTGTGTATAGTAACACTGAAGAACTAAAAATGCAATTTAGGTAATCTTACATG
                                                                                                                                         TAAATGTGTGTGTATAGTAACACTGAAGAACTAAAAATGCAATTTAGGTAATCTTACATG
                                                                                                                                                                                                                            GACCAAATGTGATGCATGGTGGATCCAGAAAACAAAAAGTAGGATACTTACAATCCATAA
                                                                                                                                                                                                                GACCAAATGTGATGCATGGTGGATCCAGAAAACAAAAGTAGGATACTTACAATCCATAA
                                                                                                                                                                                                                                                           CACACAGCCAACATTTTAGGAACTTTCTAGATTATAGCATAAGGACATGTAATTTTTGAA
                                                                                                                                                                                                                                                                       CACACAGCCAACATTTTAGGAACTTTCTAGATTATAGCATAAGGACATGTAATTTTTGAA
                                                                                                                                                                                                                                                                                                    AATCCACGCTGATCCCGGCTGTGATTTCTGAGAGAAGGCTCTATTTTCGTGAYTGTTCAA 660
                                                                                                                                                                                                                                                                                                                                               CGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCCGAGTGTGCGCTGCAGGGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGAGTTTGGTATCTGCAAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAGAAACTTGCTACCGCACAGTCTCAGGCATGGATGGCATGAAGTGTGGCCCGGGGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGAGTTTGGTATCTGCAAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAGAAACTTGCTACCGCACAGTCTCAGGCATGGATGGCATGAAGTGTGGCCCGGGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
1080
                                                                                                                                                                                                                                                                                720
                                                                                  960
                                                                                                       960
                                                                                                                            900
                                                                                                                                                                        840
                                                                                                                                                                                             840
                                                                                                                                                                                                                 780
                                                                                                                                                                                                                                       780
                                                                                                                                                                                                                                                            720
                                                                                                                                                                                                                                                                                                                                                 600
                                                                                                                                                                                                                                                                                                                                                                    600
                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
       밁
                     Š
                                               밁
                                                                 γ
                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                        JOURNAL
MEDLINE
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
SOURCE
ORGANIŚM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
HSRNAESM1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멅
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                           Matches
                                                                                                   Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                          sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1081
      61
                          63
                                               ш
                                                                     4
                                       GAGCGTCTTGCTGCTGACCACGCTCCTCGTGCCTGCACACCTGGTGGCCGCCTGGAGCAA
            GAGCGTCTTGCTGCTGACCACGCTCCTCGTGCCTGCACACCTGGTGGCCGCCTGGAGCAA 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NTCTNAAGGAC 1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission Submitted (06-JUL-1995) P. Prof. CALMETTE, LILLE 5901
                                                                                                                                                                                                                                                                                                                                                                                                      Bukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; H 1 (bases 1 to 2006)
Lassalle,P., Molet,S., Janin,A., Heyden,J.V., Tavernier, Fiers,W., Devos,R. and Tonnel,A.B.
ESM-1 is a novel human endothelial cell-specific molecul in lung and regulated by cytokines
J. Biol. Chem. 271 (34), 20458-20464 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HUNKMAESMI 2006 bp RNA
H. sapiens mRNA for ESM-1 protein
X89426
                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                  96355375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ESM-1 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g1150418
                                                                                                                                                                                                                                                                                                                                                                            Lassalle, P.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to
                                                                                        Conservative
                                                                                                                                                                                                                                                 56. .1.
56. .610
                                                                                                                                                     product="ESM-1 secretory protein"

/db_xref="pII::e189266"

/db_xref="pII::e189266"

/db_xref="pID::g1150419"

/translation="MKSVLLLTTLLVPAHLVAAWSNNYAVDCPOHCDSSECKSSPRCK
RTVLDDCGCCRVCAAGREETCYETVSCHDGMKCGPGLRCOPSNGEDPFGEEFGICKDC
PYGTFGMDCRETCNCQSGICDRGTGKCLKFPFFQYSVTKSSNRFVSLTEHDMASGDGN
IVREEVVKEMAAGSPVMKKWLNPR
IVREEVVKEMAAGSPVMKKWLNPR
333 c 475 g 575 t
                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
/cell_line="HUVEC"
/clone="All.1"
                                                                                                                                                                                                                                           codon_start=1
                                                                                                                                                                                                                                                                                                                                ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1271
                                                                                                  94.8%;
                                                                                                                                                                                                                                                                                                                                                                                     2006)
                                                                                      Score 1204.8;
Pred. No. 1.1e
3; Mismatches
                                                                                                                                                                                                                                                                                                                                            ত ব
                                                                                                                                                                                                                                                                                                                                           Lassalle, FRANCE
                                                                                      l.1e-290;
les 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Heyden, J.V., Tavernier, J.,
                                                                                                          DB 10;
                                                                                                                                                                                                                                                                                                                                                      INSERM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRI
                                                                                    Indels
                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                    Unite
                                                                                                                                                                                                                                                                                                                                                                                                                            molecule expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07-OCT-1996
                                                                                                           2006;
                                                                                    6
                                                                                                                                                                                                                                                                                                                                                    416,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo
                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                   Ļ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1200
                                                                                                                                                                                                                                                                                                                                                    ጀ
                                                                                                                                                                                                                                                                                                                                                   ď
                                                                                   4.
```

멍 Š 밁 δÃ 밁 δÕ 밁 Qy 밁 Qy 밁 δõ 밁 Ş 밁 δÃ Ъ VΩ В δÃ В δÃ 밁 Qy 밁 δ 밁 δÃ В δÃ 밁 δÃ 밁 Qy 밁 δõ

1021 1021 961 961 901 901 841 841 781 781 721 721 661 661 601 601 541 541 481 481 421 421 361 361 301 301 241 241 181 181 121 121

```
B
                                                                                                                                                                  Š
                                                                                                                                                                                            Ş
                                                                                                                                                                                 밁
                                                                                                                                                                                                            밁
                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                    뭐
                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                       뮍
                                                                                                                                                                                                                                                                                                                                 γQ
                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                   γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
    1201
                                            1080
                                                          1081
                                                                       1020
                                                                                    1021
                                                                                                 960
                                                                                                                            900
                                                                                                               961
                                                                                                                                          901
                                                                                                                                                       840
                                                                                                                                                                    841
                                                                                                                                                                                 780
                                                                                                                                                                                              781
                                                                                                                                                                                                            720
                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                          723
                                                                                                                                                                                                                                                    663
                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                              603
                                                                                                                                                                                                                                                                                             541
                                                                                                                                                                                                                                                                                                          543
                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                     483
                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                423
                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                          363
                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                     303
                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                               243
                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           183
AACAGCTTTGANCTGAGAGCAATTYCAAAAGGCTGCTGATGTAGCCCCCGGGTTNCCTNT
            TTCTTTGACTTTGATGTACATTAATGTTGGGATATGGAATGAAGACTTAAGAGCAGGAGA
                                                                                                                                                                             GAGACAGGTCAACCAAAGAGGGAGCTAGGCAAAGCTGAAGACCGCAGTGAGTCAAATTAG
                                                                                                                                GAGACAGGTCAACCAAAGAGGGAGCTAGGCAAAGCTGAAGACCGCAGTGAGTCAAATTAG
                                                                                                                                                   TAAATGTGTGTGTATAGTAACACTGAAGAACTAAAAATGCAATTTAGGTAATCTTACATG
                                                                                                                                                          TAAATGTGTGTGTATAGTAACACTGAAGAACTAAAAATGCAATTTAGGTAATCTTACATG
                                                                                                                                                                                                       AGAAACTTGCTACCGCACAGTCTCAGGCATGGATGGCATGAAGTGTGGCCCGGGGCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCCAACAGATTTGTTTCTCTCACGGAGCATGACATGGCATCTGGAGATGGCAATATTGT
                                                                                                                                                                                                                                                                                                                          TTCCAACAGATTTGTTTCTCTCACGGAGCATGACATGGCATCTGGAGATGGCAATATTGT 542
                                                                                                                                                                                                                                                                                                                                               TGACAGGGGACGGGAAAATGCCTGAAATTCCCCTTCTTCCAATATTCAGTAACCAAGTC
                                                                                                                                                                                                                                                                                                                                                                                 TCCCTACGGCACCTTCGGGATGGATTGCAGAGAGACCTGCAACTGCCAGTCAGGCATCTG
                                                                                                                                                                                                                                                                                                                                                                                                           GTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGAGTTTGGTATCTGCAAAGACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGACAGGGGGACGGGAAAATGCCTGAAATTCCCCCTTCCTACCAATATTCAGTAACCAAGTC
                                                                                                                                                                                                                                                                                                                                                                         GTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGAGTTTTGGTATCTGCAAAGACTG
                                        1137
                                                     1140
                                                                                             1019
                                                                   1079
                                                                                1080
                                                                                                           1020
                                                                                                                         959
                                                                                                                                      960
                                                                                                                                                    899
                                                                                                                                                                 900
                                                                                                                                                                              839
                                                                                                                                                                                          840
                                                                                                                                                                                                                                                                                         600
                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                            482
                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                                                       422
                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                 362
                                                                                                                                                                                                                                                                                                                                                                                                                                             302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      242
                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  182
```

δã 뮍 Qy 밁 δÃ 밁 Š 밁 δÃ 밁 δÃ

```
S
                                          밁
                                                                Ş
                                                                                                             δÃ
                                                                                        밁
                                                                                                                                         밁
                                                                                                                                                               Ş
                                                                                                                                                                                        밁
                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
MEDLINE
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
HSRNAESM1
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NID
                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 1252; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                              sig_peptide
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1258
                 243
                                          181
                                                                183
                                                                                        121
                                                                                                                 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1198
                                                                                                                                         61
                                                                                                                                                                63
                                                                                                                                                                                                                  4
                                                                                  GAGCGTCTTGCTGACCACGCTCCTCGTGCCTCCACACCTGGTGGCCGCCTGGAGCAA 122
                                 AGAAACTTGCTACCGCACAGTCTCAGGCATGGATGGCATGAAGTGTGGGCCCGGGGCTGAG
                                                                                                                                                                                  CTTCCCACCAGCAAGAACACGACTGGAGAGCCGAGCCGGA-GCAGCTGGGAAACATGAA 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NTCTNAAGGAC 1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATCTGAAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
Direct Submission
Submitted (06-JUL-1995) P.M. Lassalle,
Prof. CALMETTE, LILLE 59019, FRANCE
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HSRNAESM1
H.sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; Hom 1 (bases 1 to 2006)
Lassalle, P. Molet, S., Janin, A., Heyden, J.V., Tavernier, J. Fiers, W., Devos, R. and Tonnel, A.B. ESM-1 is a novel human endothelial cell-specific molecule in lung and regulated by cytokines J. Biol. Chem. 271 (34), 20458-20464 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     H.sapiens
X89426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lassalle, P.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ESM-1 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 2006)
                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                Ω
                                                                                                                                                                                                                                                                                                        /product="ESM-1 secretory protein"
/db_xref="piD:e1189266"
/db_xref="piD:e1150419"
/db_xref="piD:e1150419"
/translation="MKSVLLLTTLLVPAHLVAAWSNNYAVDCPOHCDSSECKSSPRCK
#TVLDDCGCCRVCAAGRGETCTRTVSGMDGMKCGPGLRCQPSNGEDPFGEEFGICKDC
PYGTEGMDCRETCNCQSGICDRETGKCLKFPFFQYSVTKSSNRFVSLTEHDMASGDGN
IVREEVVKENAAGSPVRKKMLNPR"
333 c 475 g 575 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Homo sapiens"
/db_xref="taxon:9606"
/cell_line="HUVEC"
/clone="All.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1. .2006
                                                                                                                                                                                                                                                                                                                                                                                                               codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1268
                                                                                                                                                                                                                                                    94.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                            .610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2006 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ESM-1
                                                                                                                                                                                                                                    Score 1204.8; DB 40; Length Pred. No. 1.1e-290; 3; Mismatches 10; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INSERM, Unite 416,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-OCT-1996
                                                                                                                                                                                                                                    6,
                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ۲
                                  240
                                                           242
                                                                                                           182
                                                                                                                                                                                  60
           302
                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ď
                                                                                                                                                                                                                                   4
```

	8 AICTGAAGGAC 1268		ACAGCTTTGAAGCAATTYCAAAAGGTTTTGAAGCTTATGGAAATTTTGAGTTAACA AACAGCTTTGAACTGAGAGAATTYCAAAAGGCTGCTGATGTAGCCCCCGGGTTACCTNT	CICIAGAAITIAATTGTGGTTTTTTTTTTTTTTGGCTTTGGGAAAAGTCAAAATAAA ACAACCAGAAAACCCCTGAAGGAAGTAAGATGTTTGAAGCTTATGGAAATTTGAGTAACA	CTCTAGAATTAATTRTGCTTTTTTTTTTTTTTGGCCTTTGGTAAGTAAAAAAAAA	TICTTTGACTTTGATGTACATTAATGTTGGGATATGGAATGAAGACTTAAGAGCAGGAGA AGATGGGGAGGGGGGGGGG		1 GAGACAGGTCAACCAAAGAGGGAGCTAGGCAAAGCTGAAGACCGCAGTGAGTCAAATTAG 960	11 TAAATGTGTGTGTATAGTAACACTGAAGAACTAAAAATGCAATTTAGGTAATCTTACATG 900 	31 CATCCATATGACTGAACACTTGTATGTGTTTGAAATATTCGAATGCATGTAGATTTGT 840 	23CCAAATGTGATGCATGGTGGATCCAGAAAACAAAAAGTAGGATACTTACAATCCATAA 780 	63 CACAGCCAACATTTTAGGAACTTTCTAGATTATAGCATAAGGACATGTAATTTTTGAAGA 722 	03 TCCACGCTGATCCCGGCTGTGATTTCTGAGAGAAGGCTCTATTTTCGTGAYTGTTCAACA 662 		83 TTCCAACAGATTTGTTTCTCTCACGGAGCATGACATGGCATCTGGAGATGGCAATATTGT 542 	23 TGACAGGGGACGGGAAAATGCCTGAAATTCCCCTTCTTCCAATATTCAGTAACCAAGTC 482 	63 TCCCTACGGCACCTTCGGGATGGATTGCAGAGAGACCTGCAACTGCCAGTCAGGCATCTG 422 	41 AGAAACTTGCTACCGCACAGTCTCAGGCATGGATGGATGTAGTGTGGCCCGGGGCTGAG 300 03 GTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGAGTTTGGTATCTGCAAAGACTG 362
l Qy 42	Qy 361 Db 354	Qу 301 Db 294	Qy 241 Db 234	Qy 181 Db 174	Qy 121 Db 114	оу 6	Db Dy	Best I Matche	Query	BASE COUNT		CDS		JOURNAL FEATURES	JOURNAL REFERENCE AUTHORS	REFERENCE AUTHORS TITLE	SOURCE ORGANISM	LOCUS DEFINITION ACCESSION NID NID KEYWORDS
1 TGTGACAGGGGGACGGGAAAATGCCCTGAAATTCCCCCTTCTTCCAATATTCAGTAACCAAG 480	1 TGTCCCTACGGCACCTTCGGGATGGATTGCAGAGAGACACTGCAACTGCCAGTCAGGCATC 420	1 AGGTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGAGTTTGGTATCTGCAAAGAC 360 	1 GGAGAAACTTGCTACCGCACAGTCTCAGGCATGGATGGCATGAAGTGTGGCCCGGGGCTG 300	1 CGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCTGCCGAGTGTGCGCTGCAGGGCGG 240		61 AAGAGCGTCTTGCTGCTGACCACGCTCCTCGTGCCTGCACACCTGGTGGCCGCCTGGAGC 120 	1 CTGCTTCCCACCAGCAAGACCACGACTGGAGAGCCGAGCCGGAGCAGCTGGGAAACATG 60			KIVLDUGCCQVCAAGFGETCYRTVSGMDGVRGGFGLKCHFYSEEDDFGDEFGYCKDC PYGTTGMDCKETCNCQSGICDRVTGRCLDFPFFQYAAAKSPSRTSASQTERDAASGDG NAVREEIGDRNAARESYMKWLNPR" 576 a 346 c 503 g 584 t	/codon_start=1 /product="PG25" -/db_xref="PID:g1750198" -/translation="MKSLLLLTTLLIPLHLGMAWSAKYAVDCPEHCDNTECRSSLRCK			Submitted Bethesda,	Unpublished (1996) E 2 (bases 1 to 2009) S Wang,X., Brownstein,M.J. and Young,W.S.	E 1 (bases 1 to 2009) S Wang, X., Brownstein, M.J. and Young, W.S. S PG25, a full-length pineal-specific cDNA, cloned by diffe	Norway rat. ISM Rattus norvegicus Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;	

δ 밁 Q В δÃ 밁 Š

481

483 421 423 361 363

g Qy

밁 δ 밁

303 301

В

661

663 109 603 541 543

780 781 720 723

RESULT RNU80818

δÃ 밁

1258

밁 δÃ 밁 δÃ 멂 VΩ В δÃ 밁 δõ 멍 δÃ ₽ δĀ 밁 Š 맑 Q 밁 δ

1198 1261

1201 1138 1141 1080 1081 1020 1021 960 961 900 901 840 841

```
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                     DEFINITION
ACCESSION
                                                                                                                                                                                            RESULT
166494/c
                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                       밁
                          FEATURES
                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                               EYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                       ORGANISM
                                                                                                                                                                                                                                               1152
                                                                                                                                                                                                                                                                                                                                                    1057
                                                                                                                                                                                                                                                                                                                                                                                                                                1008
                                                                                                                                                                                                                                                                                                                                                                                                       997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             414
                                                                                                                                                                                                                                              AGTCTAAACAACTA 1165
                                                                                                                                                                                                                                                                      AATTTGAGTAACAA 1201
                                                                                                                                                                                                                                                                                                         AAGTCAAAATAAAACAACCAGAAAACCCCTGAAGGAAGTAAGATGTTTTGAAGCTTATGGA 1187
                                                                                                                                                                                                                                                                                                                                                                     ----AAATAAACAAGTCCAGAAAAGCCTTGAAGGAAGTGAGATATTGGAAGCTTATGGG
                                                                                                                                                                                                                                                                                                                                                                                               TGGAGTAAGGGACTGTGGAGATGGTAGCGAAAGTAGGGGCTATCATATTTGGCTCCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                        TAAGAGCAGGAGAAGATGGGGAGGGGGGTGGGGAAATAAAATATTTAGCCCCTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACTGTGGGTTTGTTGACTTGCGTGTACGTTCTTATTGAGATACAGGCTGAAGAAGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCAAATTAGTTCTTTGACTTTGATGTACATTAATGTTGGGATATGGAATGAAGA----CT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACTTGATATGCAATTGAGATGGTCTTACTGTCAAGGAGTAATCCAATCAAAGCTGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTTACATGGAGACAGGTCAACCAAAGAGGGAGCTAGGCAAAGCTGAAGACCGCAGTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTGTTAAATGTGTGTGTAT----AGTAACACTGAAGAACTAAAAATGCAATTTAGGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATAACATCCATATGACTGAACACTTGTATGTGTTTGTTAAATATTCGAATGCATGTAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGAGACACATATGACTGAACAATT-TAGATATTTGTCAAATATTTAAATTCATGGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGAGATCAAGTGTGATTCA-----GAAAAAAAAAAATGTAGGCTATACACAACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAAGACCAAATGTGATGCATGGTGGATCCAGAAAACAAAAAGTAGGATACTTACAATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            - CAACTTTCAGCCAACATTCTAAGAACCGTCTAGAACAAGACTGTGGACATGTAATTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCAACACAGAGCCAACATTTTAGGAACTTTCTAGATTATAGGATAAGGACATGTAATTTT 716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTAAATCCGCGCTGATCCTGGCTGAGATTTGCCAAGAGGAGGCTCCACTTTAGTGAC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTAAATCCACGCTGATCCCGGCTGTGATTT-CTGAGAGAAGGCTCTATTTTCGTGAYTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTGTGAGAGAGAGATTGGAGACCGGAACGCTGCCCGGCCCTCTGTAAT----GAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTGTGAGAGAAGAAGTTGTGAAAGAGAATGCTGCCGGGTCTCCCGTAATGAGGAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCGCCCAGCAGGACCTCTGCCTCCCAAACAGAGCGCGATGCAGCCTCTGGAGATGGCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCTTCCAACAG----ATTTGTTTCTCTCACGGAGCATGACATGGCATCTGGAGATGGCAAT
                             Unclassified.

1 (bases 1 to 7218)

1 (bases 1 to 7218)

Dorner,F., Scheiflinger,F. and Falkner,F.Gunter.

Recombinant fowlpox virus

Patent: US 5670367-A 14 23-SEP-1997;
                                                                                                    Unknown
Unknown
                                                                                                                                        166494
Sequence
166494
g2724471
                                                                                                                                                                                                                                                                                                                                              ----TAGTAGATTAAAAGTCATTATTTTGTTTTAATTGTGGG----
                                                                                                                                                                   14
                        Location/Qualifiers
/organism="unknown"
                                                                                                                                                                   from
                                                                                                                                                                              7218
                                                                                                                                                                patent
                                                                                                                                                                              ď
                                                                                                                                                                Sn
                                                                                                                                                                5670367.
                                                                                                                                                                                                                                                                                           1151
                                                                                                                                                                                                                                                                                                                                                                        1127
                                                                                                                                                                                                                                                                                                                                                                                                1056
                                                                                                                                                                                                                                                                                                                                                                                                                           1067
                                                                                                                                                                                                                                                                                                                                              1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                    996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         473
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                            TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                   HUAC002565/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                      AUTHORS
TITLE
                                                                                                                                                          AUTHORS
TITLE
                                                                                    JOURNAL
                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 24
                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            689 AGATTATAGCATAAGGACATGTAATTTTTGAAGACCAAATGTGATGCATGGTGGATCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAATATTTAGCCCTTCCTTGGTAGGTAGCTTCTCTAGAATTTAATTRTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAAAGCTGAAGACCGCAGTGAGTCAAATTAGTTCTTTGACTTTGATGTACATTAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACTAAAAATGCAATTTAGGTAATCTTACATGGAGACAGGTCAACCAAAGAGGGAGCTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAACAAAAAGTAGGATACTTACAATCCATAACATCCATATGACTGAACACTTGTATGTG 808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
Submitted (17-MAR-1998) The Institute for Genomic Research, 9712
Medical Center Dr., Rockville, MD 20850, USA
On Feb 19, 1998 this sequence version replaced gi:2894636.
Address all correspondence to: Mark Adams The Institute for Genomic Research 9712 Medical Center Dr, Rockville, MD 20850, USA e-mail address: mdadams@tigr.org. The orientation of the sequence is from SP6 end to T7 end. Genes were identified by a combination of five
                                                                                                                                                                                                                                             Submitted (19-FEB-1998) The Institute for Genomic Medical Center Dr., Rockville, MD 20850, USA 4 (bases 1 to 103911)
                                                                                                                                                                                                                                                                                                                                                                      g2896804
HTG.
                                                                                                                                                                                                                                                                                                                                                                                             Human Ch
AC002565
                                                                                                           Adams, M.D.
                                                                                                                                                        Direct Submission
                                                                                                                                                                               Submitted (26-SEP-1997) The Institute for Genomic Medical Center Dr. Rockville, MD 20850, USA (bases 1 to 103911)
                                                                                                                                                                      Adams, M.D
                                                                                                                                                                                                                    Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                     HUAC002565 103911
                                                                                                                                                                                                                                 dams, M.D.
                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                            (bases 1 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1944
                                                                                                                                                                                                                                                                                                                                             sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.9%; Score 62.4; DB 6;
llarity 5.9%; Pred. No. 1.5e-05;
Conservative 225; Mismatches 161
                                                                                                                                                                                                                                                                                                                                                                                                         Chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1491
                                                                                                                                                                                                                                            103911)
                                                                                                                                                                                                                                                                                                                                                                                                    16
bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         o
                                                                                                                                                                                                                                                                                                                                                                                                         BAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1486
                                                                                                                                                                                                                                                                                                                                                                                                       DNA
clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        φ
                                                                                                                                                                                                                                                                                                                                                                                                        CIT987SK-A-598D4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        đ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        others
                                                                                                                                                                                                                                                                                                                                                                                                      complete sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1022
                                                                                                                                                                                                      Research,
                                                                                                                                          Research,
                                                                                                                                                                                                                                                                                                                                                                                                                  17-MAR-1998
                                                                                                                                                                                                                                                                                                                             Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                    JOURNAL REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
ORGANISM
         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 7
HUAC002565/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                    AUTHORS
TITLE
                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                673 ATTTTAGGAACTTTCTAGATTATAGCATAAGGACATGTAATTTTTGAAGACCAAATGTGA 732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Sin
hes 119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAACACTIGTATGTGTTTAA-ATATTCGAATGCATGTAGATTTGTTAAATGTGTGT 851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTATAGTAACACTGAAGAACTAAAAATGCAATTTAGGTAATCTTA 896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCATGGTGGATCCAGAAAACAAAAGTAGGATACTTACAATCCATAACATCCATATGAC 792
Submitted (17-MAR-1998) The Institute for Genomic Research Medical Center Dr., Rockville, MD 20850, USA On Feb 19, 1998 this sequence version replaced gi:2894636
                                                                                                                                                                                                                      Direct Submission
Submitted (26-SEP-1997) The Institute for Genomic Research, 9712
Medical Center Dr. Rockville, MD 20850, USA
3 (bases 1 to 103911)
                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 103911)
Adams, M.D., Loftus, B.J., Zhou, L., Crosby, M., Fuhrmann, J.,
Brandon, R., Kim, U.J., Kerlavage, A.R. and Venter, J.C.
Human Chromosome 16 BAC clone CIT987SK-A-598D4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HTG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HUACO02565 103911 bp DNA PRI 17-MAR-1998
Human Chromosome 16 BAC clone CIT987SK-A-598D4, complete sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  methods including: XGRAIL (available by anonymous ftp from arthur.epm.ornl.gov), Genefinder (Phil Green, University of Washington), Genscan (Chris Burge, http://gnomic.stanford.Edu/`chris/GENSCANW.html)searches of the complete sequence against a peptide database, and the Human gene Index database at TIGR (http://www.tigr.org/tdb/hgi/hgi.html). Genes without pepetide homolgy having spliced EST hits are termed 'Unknown gene product Genes encoding tRNAs are predicted by tRNAscan-SE (Sean Eddy, http://genome.wistl.edu/eddy/tRNAscan-SE/).
                                                                    Direct Submission
                                                                                                               Submitted (19-FEB-1998) The Institute for Genomic Medical Center Dr., Rockville, MD 20850, USA 4 (bases 1 to 103911)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AC002565
                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                    Adams, M.D
                                                                                                                                                                                                                                                                                                                 Adams,M.D.
                                                                                                                                                                                                                                                                                                                                                        Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g2896804
                                                                                             Adams, M.D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29634
                                                                                                                                                                                                                                                                                                                                    (bases 1 to 103911)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ជា
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /map= rvpr-
/clone="A-598D4"
22640 c 22484 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1. .10391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /map="16p12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         score 45; DB 11; Length 103911;
Pred. No. 0.39;
0; Mismatches 105; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29153 t
                                               Research,
                                                                                                                                                        Research,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  product'.
                                                                                                                                                           9712
```

밁 Ş 밁 δÃ 뭥 Ş 밁

В ρ В Š

Вþ δÃ 뭥 QΥ

```
JOURNAL
REFERENCE
                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MMMH461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                         TITLE
                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 3.5%;
Best Local Similarity 52.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               852 GTATAGTAACACTGAAGAACTAAAAATGCAATTTAGGTAATCTTA 896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     673 ATTTTAGGAACTTTCTAGATTATAGCATAAGGACATGTAATTTTTGAAGACCAAATGTGA 732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Address all correspondence to: Mark Adams The Institute for Genomic Research 9712 Medical Center Dr, Rockville, MD 20850, USA e-mail address: mdadams@tigr.org. The orientation of the Sequence is from SP6 end to T7 end. Genes were identified by a combination of five methods including: XGRAIL (available by anonymous ftp from arthur.epm.ornl.gov), Genefinder (phil Green, University of Washington), Genscan (Chris Burge, http://gnomic.stanford.Edu/'Chris/GENSCANW.html)searches of the complete sequence against a peptide database,and the Human gene Index database at TIGR (http://www.tigr.org/tdb/hgi/hgi.html). Genes without pepetide homolgy having spliced EST hits are termed 'Unknown gene product'. Genes encoding tRNAs are predicted by tRNAscan-SE (Sean Eddy, http://genome.wustl.edu/eddy/tRNAscan-SE/).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAACACTTGTTATGTGTTTAA-ATATTCGAATGCATGTAGATTTGTTAAATGTGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCATGGTGGATCCAGAAAACAAAAGTAGGATACTTACAATCCATAACATCCATATGAC 792
Sequencing methodology: high redundancy shotgun. Interspersed Repeats were identified with RepeatMasker (available from http://ftp.genome.washington.edu/RM/RepeatMasker.html) Simple sequence repeats were identified with sputnik (available from http://serac.mbt.washington.edu/~chrisa/software/sputnik.html)
                                                                                                                                                                                                                                                                                                                                   Eukaryotae; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 138187)
Rowen,L., Qin,S., Ahearn,M.E., Loretz,C., Faust,J., Lasky,S., Mahairas,G. and Hood,L.
Sequence of the mouse major histocompatibility locus class II
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MMMMH461 138187 bp DNA ROD Mus musculus Major Histocompatibility Locus AF027865
                                                                                                                         Submitted (02-OCT-1997) Department of Molecular Biotechnology, 357730 University of Washington, Seattle, Washington 98195, US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus
                                                                                                                                                                                      Direct Submission
                                                                                                                                                                                                           ROWen,L., Qin,S., Ahearn,M., Loretz,C., Faust,J., Lasky,S.,Mahairas,G. and Hood,L.
                                                                                                                                                                                                                                                                                      Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g2555188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       house mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29634
                                                                                                                                                                                                                                                           (bases 1 to 138187)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /chromosome="16"
/map="16p12"
/clone="A-598D4"
a 22640 c 22484 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1. .103911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22484 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 45; DB 41; Length 103911; Pred. No. 0.39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches 105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         class
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22-OCT-1997
II region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    84702
                                                                                                                                    USA
                                                                                                                                                            Box
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ۲
```

```
FEATURES
                                                   repeat_region
                                                                                                           repeat_region
                                                                                                                                           repeat_region
                                                                                                                                                                          repeat_region
                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                            /rpt_family="Bl_MM"

complement(7109. .7459)
/rpt_family="ngrain"

complement/7512
                                                        /rpt_family="RLTR11A" complement(10114 . .10185) /rpt_family="(CA)n"
                                         complement(10555. .10639)
                                                                                                                                                complement(8385. .8498)
/rpt_family="pB1D7"
                                                                                                                                                                             /rpt_family="(GAAA)n"
complement(8299. 8376)
/rpt_family="(GAA)n"
                                                                                                                     complement(8508. .8542)
/rpt_family="(GAAAA)n"
                                                                                                                                                                                                                                                                            complement(7516. .7625)
/rpt_family="B3A"
                                                                                                                                                                                                                                  complement (8278.
                                                                                                                                                                                                                                                complement(8201. .8276)
/rpt_family="B3"
                                                                                                                                                                                                                                                                                                                                                                 "rpt_family-"(GA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complement(4833. .5044)
/rpt_family="MTC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complement(4655. .4969)
/rpt_family="MTE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complement(148..253)
/rpt_family="ORRIC"
complement(314..538)
/rpt_family="B3"
                                                                                                                                                                                                                                                                                                                                                                                                  rpt_family="(CA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="G could be an A"
/replace="a"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(546. .642)
/rpt_family="B1-F"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone_lib="Genome Systems mouse BAC library" complement(5...117)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:10090"
/chromosome="17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
1. .138187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'clone="BAC461G2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                  __family="B3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   _fami
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _family="RMER5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     _family="(GA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _family="(CA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _family="(CAGA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _family="(GA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          _family="RSINE1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          _family="B1-F"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       _family="RSINE1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 lement(1597. .1922)
_family="ORRIA1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       _family="B2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _family="MTE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . 2690
                                                                                                                                                                                                                                                                                                                                                                                                                                                               LY-"MTD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ly-"(CA)n"
                                                                                                                                                                                                                             .8377)
                                                                                                     SGD
                                                                                                                                gene
                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SgS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
/gene="H2 TAP1"
/note="intron-exon boundaries defined in relation to cDNAs found in GenBank Accession Numbers X59615 and U60019, and
                                              join(22734. 23259,24037. 24151,24289. 24419,25422. 25627,
26188. 26385,27696. 27824,27987. 28175,28347. 28520,
28743. 28905,29706. 29842,31430. 31636)
                                                                                                                                                                                                                     /rpt_family="B1-F"
complement(19735. .19861)
/rpt_family="B3"
19955. .20093
                                                                                                         gene-"H2 TAP1"
                                                                                                                                                                                                                                                                                                                                                         /rpt_family="B3A"
complement(18204. .18350)
/rpt_family="B1-F"
                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
/product="70% proteasome subunit lmp2"
/db_xref="plD:q2555189"
/translation="MLRGAPTAGSFRTEEVHTGTTIMAVEFDGGVVVGSDSRVSAGT
AVVNRYFDKLSPLHQHIFCALSGSAADAQAIADMAAYQLELHGLELEEPPIVLAAANV
VKNISYKYREDLLAHLIVAGWDQCEGGOVYGTMGGMLIRQPFTIGGSGSSYIYGYVDA
AYKPGMTPEECRRFTTDAITLAMNRDGSSGGVIYLVTITAAGVDHRVILGDELPKFYD
                                                                                                                note="3 As probably correct -- could be replace="aa"
2734 .31636
                                                                                                                                                                                                                                                                                                     /rpt_family="(CA)n"
19448. .19496
/rpt_family="19496"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Intron-exon boundaries defined using the cDNA sequence found in GenBank Accession Number U22919 and confirmed by EST hits"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(join(17078. .17205,17943. .18084,18469. .18598,
19136. .19267,20584. .20651,22104. .22163))
/gene-"H2 lmp2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(16862. .16918)
/rpt_family="(TAAA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(17042. .22163)
/gene="H2 lmp2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(16138. .16401)
/rpt_family="B4A"
16431 .16637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /rpt_family="RSINE1"
complement/16177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /rpt_family="PB1D9"
complement(1500)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rpt_family="B3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /rpt_family="B3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rpt_family="MTB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'rpt_family="RSINE1"
'3842. 14700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rpt_family="
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /rpt_family="B3"
11728. .11839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /rpt_family="MTE"
11179. .11326
                                                                                                                                                                                                                                                                                               _family-"ID2"
                                                                                                                                                                                     _family="B1_MM"
0. .20072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         _family="B1_MM"
5. .13540
                                                                                                                                                                                                                                                                                  .19638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _IAMILY-"MLT2FB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                _fami
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _family="MT2A"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   family-"B3"
                                                                                                                                                                   1mp2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ily-"MTE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (TGG)n"
                                                                                                                                                N
```

```
gene
                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                 /rpt_family="(CA)n"
complement(29488. .29611)
/rpt_family="0"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /rpt_family="B1-F"
24557. .2466'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FGRSFRENIAYCLNRIPTMEEITAVAVESGAHDFISGFYQGYDTEVGETCNQLSGGQR
QAVALARALIRKPLLLILDDATSALDAGNQLRVQRLLYESPKRASRTVLLITQQLSLA
EQAHHLIFLREGSVGEGGTHLQLMKRGGCYRAMVEALAAPAD"
complement(23500. 23602)
/rpt_family="(GA)n"
23610. 23698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RRLYLVLVLILICSCAGEMAIPFFTGRITDWILQDKTVPSFTRNIWLMSILTIASTALE FASDGIVNITWGHMHGXVHEFVFRAVLGSGIGFFLKRPAGSITSKTPEDTANVCESIS GTLSILLWYLGRACIILFMEFGRPTEDTANVCESIS GTLSILLWYLGRACIILFMEFMFGSPLUTLVTILULPHLFLLPKKLGKVPGSDESILAKSTOVALEALSAMPTVRSFANEGGEAQKFRQKLEEMKTLNKKEALAYVABPWTTS VSGMLLKVGILYLGGQLVIRGAVSGSBLVSFVLYQLQFTQAVQVLLSLYFSMGKAVGS SEKIFEYLDRFYCSFLYSGSLAFSNKGLVEFQDVSFAYPQTKQVLGGUTTFTLHFGT VTALVGFNGSGKSTVAALLQNLYQFTGGQLLLDGQCLVQYDHHYLHTQVAAYGQEPLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="antigen processing transporter TAP1"
/db xref="prD:92555195"
/db xref="prD:92555195"
/translation="MAAHVWHAAALLLLVDWLLLRPMLPGIFSLLVPEVPLLRVWVVG
/translation="MAAHVWHAAALLLLVDWLLLRPMLPGIFSLLVPEVPLLRVWVVG
LSRWALIGLGVWGVTGVTGVTAGAHGWLAALQPLVAALSTALPGLALFRELAAWGTLREGD
SAGLLYWNSRPDAFAISYVAALPAAALWHKLGSLWAPSGNRDAGDMLCRMLGFLGPKK
                                                                                              /rpt_family="1x6"
join(33248. .33406,34094. .34241,34432. .34543,34996.
35566. .35770,36033. .36301)
/product="lmp7"
                                                                                                                                                                                                                 complement(30380..30594)
/rpt_family="B3"
30639..30779
                                                                                                                                                                                                                                                                            complement(30230. .30360)
/rpt_family="MIR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement(29108. .29233)
/rpt_family="(CATA)n"
complement(29236. .29359)
/rpt_family="(CATA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /rpt_family="(CA)n" complement(29108. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(25102. .25218)
/rpt_family="B1_MM"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /rpt_family="(CCCTC)n" complement(23715. . . 238
                                                                                                                                                                                                                                                                                                                                    /rpt_family="(CA)n"
complement/2005
                                                                                                                                                                                                                                                                                                                                                                      /rpt_family="(CATA)n"
complement(2061)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement (29076.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(28203.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /rpt_family="(GAA)n"
complement/20077
    join(33260. .33406,34094. .34241,34432. .34543,34996. .35125,
35566. .35770,36033. .36121)
/gene="H2-lmp7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'rpt_family="(CAGA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rpt_family="B1-F"
                                                                                                                                                                                                                                                                                                _family="B1_MM"
lement/2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   _family="B3A"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       family-"B3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST AA270189"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            _fami
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _family="B3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      _family=
                                                                                                                                                                                                 family="B3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "LLY="(CAAA)n"
27520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27449~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            y="PB1D7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "RSINE1"
                                                                                                                                           .35125
                      repeat_region
                                                              repeat_region
                                                                                                  repeat_region
                                                                                                                                         repeat_region
                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                   repeat_region
                                                          complement(43172...43255)
/rpt_family="Bl_MM"
complement(43518...43618)
/rpt_family="(GGGA)n"
44229...44347
                                                                                                                                                                             /rpt_family="B4A"
complement(42789. .428)
/rpt_family="(CATG)n"
42976. .43031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     34649.
/rpt_family="(TAGA)n"
44261. .44370
/rpt_family="(CAGA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                     41684. .41986
                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(41518.
                                                                                                                                                                                                                                                                                                                                                                               /rpt_family="Lx"
42012. .42092
                                                                                                                                                         /rpt_family="(CA)n"
                                                                                                                                                                                                                                                                            _family="POLY_A"
                                                                                                                                                                                                                                                                                                                    _family="B1_MM"
                                                                                                                                                                                                                                                                                                                                        _family="(CAAAA)n"
9. .42248
                                                                                                                                                                                                                                                                                                                                                                                                                                       _family="RSINE1"
```

```
/note="intron-exon boundaries defined in relation to
in GenBank Accession Numbers x64449 and U22031."
                                    CDNAS
```

MNKVIEINPYLLGTMSGCAADCQYWERLLAKECRLYYLRNGERISVSAASKLLSNMML QYRGMGLSMGSMICGWDKKGPGLYYVDDNGTRLSGQMFSTGSGNTYAYGVMDSGYRQD LSPEEAYDLGRRAIAYATHRDNYSGGVVNMYHMKEDGWVKVESSDVSDLLYKYGEAAL

```
join(40150. .40639,40725. .40839,43609. .43739,43945. .4.46725. .46922,47085. .47213,48870. .49058,49178. .49351,49501. .49650,50189. .50325,50769. .50948)
//gene="H2 TAP2"
/note="intron-exon boundaries defined in relation to cDNJ genBank Accession Numbers M90459 and U60087"
                                                                                                                                                  complement(39936. .39975)
/rpt_family="(CA)n"
40150. .50948
                                                                                                                                                                                                              complement(39141..39207)
/rpt_family="POLY_A"
                                                                                                                                                                                                                                                                         complement (38911.
                                                                                                                                                                                                                                                                                                                                complement(35232.
/rpt_family="B2"
                                                                                                                                                                                                                                                                                                 /gene="H2-lmp7"
                                                                                                                                                                                                                                                                                                                                                                         /rpt_family="
codon_start=
                                                                                                                                    gene-"H2 TAP2"
                                                                                                                                                                                                                                    _family="(GGA)n"
lement/301/
                                                                                                                                                                                                                                                                                                                                                                                                 .34692
                                                                                                                                                                                                                                                                                                                                                                             (TA)n"
                                                                                                                                                                                                                                                                                                                                                          .35433)
                                                                                                                  .44150,
```

/product="antigen processing transporter TAP2"
//db_xref="piD:g3555194"
//db_xref="piD:g3555194"
//translation="mALSYLRPWYSILLADMALLGLLQGSLGNLLPQGLPGLWIEGTL
//translation="mALSYLRPWYSILLADMALLGLLQGSLGNLLPQGLPGLWIEGTL
//translation="mALSYLRPWYSILLADMALLGLLQGSLGNLLPQGLPGLWIEGTL
//translation="malsylrpwysilladlarguregenergy"
//translation="malsylspacycekepcoengrimkrillkigrpupplerlaaffrlvy"
//translamaywavispacycekepcoengrimkrilkigrpupplerlaaffrly
//translamaywavispacycekepcoengrimkrilkigrpupplerlaaffrly
//translamaywavispacycekepcoengrimkrilkigrsyskepcoengripplerlaaficherly
//translamaywavispacycekepcoengripplerlaaficherly
//translamaywavispacycekepcoengripplerlaaficherly
//translamaywavispacycekepcoengripplerlaafich complement (40947 /rpt_family="B2"

.41629)

.42818

.42899)

```
repeat_region
                                                     repeat_region
                                                                                 repeat_region
                                                                                                                 repeat_region
                                                                                                                                               repeat_region
                                                                                                                                                                              repeat_region
                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /rpt_family="pl_MM"
complement(51742...51814)
/rpt_family="(cA)n"
complement(52081...52411)
/rpt_family="MTD"
52414...5744
                                                                                                                                                                               /rpt_fami
59037. .5
                     complement(60203. .60612)
                                                                  complement(59745. .59891)
                                                                                                 complement(59352. .59413)
/rpt_family="B3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /rpt_family="(CATA)n"
complement(51583. .51711.
/rpt_family="-"-"
                                                                                                                                rpt_family-"(TAAAA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                               complement(52859. .53087)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(52483.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /rpt_family="MTE"
complement(51553.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement(46539. .46573) /rpt_family="B4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(46162. .46367)
/rpt_family="B3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement(45024. .45162)
/rpt_family="LIMA4A"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(46097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(45850. .4590 /rpt_family="L1M2_orf2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement (45080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(44885..44925)
/rpt_family="(CA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement(44390. .44455)
/rpt_family="LIMB6"
complement(44641. .44845)
/rpt_family="B3"
                                                                                                                                                                 _fam
                                                                                                                                                                                                                           _fami
                                       _family="MTA"
                                                                                                                                                                                                                                                                                                                                                                                                                                    _family="ORRID"
                                                                                                                                                                                                                                                            fam
                                                                                                                                                                                                                                                                                      family-"IAP"
                                                                                                                                                                                                                                                                                                                        _fami
                                                                                                                                                                                                                                                                                                                                                                                                                   _ramily="B3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _family="(CAGA)n"
                                                                                                                                                                                                                                                                                                                                                       tam
                                                                                                                                                                                                                                                                                                                                                                                      _iam
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   _fami
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _family="(CAAAA)n"
). .49965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 _family="(CTCCC)n"
8. .48676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         _family="L1M4_orf2"
ement(46162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     _family="L1MB6"
lement(458=0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _famil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tami
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          family="(CA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           family="B3"
                                                       .60199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .46606
                                                                                                                                                                                                                                                                                                         54814
                                                                                                                                                                                                                                            58668
                                                                                                                                                                                           ly-"IAPLTR1_MM"
                                                                                                                                                                                                                          ly="IAP"
                                                                                                                                                                                                                                                                                                                                                  Ly="B3"
                                                                                                                                                          ly="RSINE1"
                                                                                                                                                                                                                                                          ly-"IAP"
                                                                                                                                                                                                                                                                                                                       ly-"IAPLTR1_MM"
                                                                                                                                                                                                                                                                                                                                                                                    1y="B2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11y="B4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ly="PB1D7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    y-"(CA)n"
                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                mRNA
                                                                                                                                                                                                   Sg
                                                                                                                                                                                                                                                                                                                                             unsure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /rpt_family="MTC"

complement(71163..71338)

/rpt_family="NMER19"

complement(71332..71486)

/rpt_family="NMER19"

/rpt_family="NMER19"
/codon_start=1
/product="Iabeta2 subunit"
/product="Iabeta2 subunit"
/db_xref="plb:q2555191"
/tans1atton="McAGRAPWYVALLVNLMRLDSEMIEGRDSPENFVIQAKADCYFT
/trans1atton="McAGRAPWYVALLVNLMRLDSEMIEGRDSPENFVIQAKADCYFT
NGTEKVHLLVRFIFNLEEYLHFDSDLGMFVALTELGEPDADGWNKRLDLLETSRAAVN
MVCROKYKLGAPETVERNVPPEVTVYPERTPLLQQHNLLLCSVTGFYPGDISVKWFRN
GQEERSGVMSTGLVRNGDWTFQTTVMLEMIPELGDIYSCLVEHPGLLRPVSVAMMAQS
                                                                                                             /note="intron-exon boundaries defined in relation to EST AA175921 and the orthologous human gene HLA-DObeta, GenBank Accession Number X03066."
                                                                                                                                                                                                                                                                                                                                                                                 /rpt_family="MTD"
complement(73050...73102)
/rpt_family="(TAA)n"
                                                                                                                                                     /gene="H2-IAbeta2"
/gene="H2-IAbeta2"
join(73821. .73911,75857. .76126,77286. .77567,78317.
join(73821. .73911,75857. .76126,77286. .77567,78317.
/gene="H2-IAbeta2"
                                                                                                                                                                                                                                                                                                                                     /rpt_family="PB1D10"
73739. 73748
                                                                                                                                                                                                                                                                                                                                                                                                                                  complement(72512.../rpt_family="(CA)n"
72584. .72987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(71848. .72013)
/rpt_family="RMER19"
72015. .72208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      70342. .70396
/rpt_family="B2"
70396. .70453
                                                                                                                                                                                                                                                          join(73821. 73911,75857. 76126,77286. 77567,78317. 78427,
78737. 78765,78938. 79265)
/gene="H2-IAbeta2"
                                                                                                                                                                                                                               /product="IAbeta2"
73821. .79265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /rpt_family="RMER19"
complement/71940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /rpt_family="LIMA7"
complement(68330. .684200)
                                                                                                                                                                                                                                                                                                     note-"possibly 11 Ts rather than 10 Ts"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /rpt_fami
70342. .7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /rpt_fami
70179. .7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /rpt_family="B2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /rpt_family="B2"
70445. .70625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement(69407. .69625)
/rpt_family="82"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement(69281. .69395)
/rpt_family="L1M2_orf2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement(68448. .68655)
/rpt_family="B3A"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement(67799. .67955)
/rpt_family="RMER19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement (68771.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /rpt_family="IAPLTR1_MM"
60971. .67441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /rpt_family="RMER19"
60615. .60962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rpt_family="IAPLTR1_MM"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               _family="PB1D9"
lement/<0'.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              family="(CAA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                _family="RSINE1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      _fami
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ly-"MTD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ly-"B2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ly="IAP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .72586)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .68814)
                                                                                                                                                                                           .78427,
```

```
repeat_region
                               repeat_region
                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                     repeat_region
                                                                                                                 repeat_region
                                                                                                                                              repeat_region
                                                                                                                                                                          repeat_region
                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /rpt_family="pBID9"
complement(83255, .8331,
/rpt_family=""
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement(82009. .82224)
/rpt_family="B3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note-"Unclear region in a microsatellite conflict with forward reads." complement(81383. .81530)
/rpt_family-"B1_MM"
                                                                                                                 /rpt_family="L1M4_orf2"
complement(87583. .87609)
                                                                                                                                               complement(87520.
                                                                                                                                                                                                                                                                                          complement(86116
                                                                                                                                                                                                                                                                                                                    /rpt_family="(CA)n"
complement(85716. .
                                                                                                                                                                                                                                                                                                                                                                                          complement(83872. .84181)
/rpt_family="L1M4_orf2"
                                                                                                                                                                                                                                                                                                                                                                                                                                       complement(83607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(83605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement(82426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(82359.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /rpt_family="RSINE1"
complement(76231. .7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 eyswkkilsgaavfllglivflvgvvihlkaqkasvetqpgneasreslhsqp"
74035. .74186
                                                                                                                                                                                                                                                                                                                                                                                                                         rpt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rpt_family="RSINE1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        t_family="L1M4_orf2"
lement(83540
                                                                                                                                                                                                                                                                                                                                                                                                                                    _family="MTC"
                                                                                                                                                                                                                                                                                                                                                                                                         __family="B1-F"
lemen+/822-
                                                                                                                                                                                                                                                                                                                                                                                                                                                             _family="B1_MM"
lement(82/~~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                _family="RSINE1"
7. .77037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      _family="B1_MM"
8. .74335
                                                                                                                                                                                                               _famı.
                                                                                                                                                                                                                                                _fami
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _family="(GGGA)n"
2. .75335
                                                                                                                                                                                                                                                                 _family="MT2B"
ement(8)f(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 _family="RMER19"
  _family="(GAAAA)n"
|. .89979
                                                                         _family="MTD"
                                                                                     _family="(TAAA)n"
). .88055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _fami
                                              tami
                                                                                                                                                                                       family="(AAAAC)n"
                                                                                                                                                                family="B3"
                                                                                                                                                                                                                                                                                                                                                                  tam
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   family="CHARLIE1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 family-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          family="(CA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     family="B4"
                               .89843
                                                                                                                                                                          .87299
                                                                                                                                                                                                        .87085
                                        .ly="B1_MM"
                                                                                                                                                                                                                                               LY-"B1_MM"
                                                                                                                                                                                                                    .y="B1_MM"
                                                                                                                                                                                                                                                                                                                                                             .y="B1-F"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "(GA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               " (GGGA)n"
                                                                                                                                                                                                                                                                                                                     .86114)
                                                                                                                                              .87580)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           reverse reads
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                repeat_region
                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
             repeat_region
                                                        unsure
                                                                                     repeat_region
                                                                                                                                            repeat_region
                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /rpt_family="(TAGA)n"
90630..91358
              /note="low quality region"
/replace="c"
110723. .110766
                                                                                                                                                                       /rpt_family="B1_MM" complement(109223.
                                                                                                                                                                                                      /rpt_famil
108977. .1
                                                                                                                                                                                                                                                                                       /rpt_family="RMER19"
complement(107131. .107220)
                                                                                                                                                                                                                                                                                                                                                                           /rpt_family="(GA)n"
complement(106458.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement (105588.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement(101091. .101567)
/rpt_family="L1_MM"
complement(101879. .101971)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(100937. .101084)
/rpt_family="B1_MM"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(100810. .100925)
/rpt_family="(GAAA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /rpt_family="(GA)n"
complement/10005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/product=_Iabeta_subunit"
/product=_Iabeta_subunit"
/db_xref="PID:q2555192"
/taanslatton="MALQIPSLLLSAAVVVLMVLSSBGTEGGDSERHFVYQFMGECYF
TNGTQRIRYTRYINREETVRYDSDVGEHRAVTELGRPDAEYWNSQPEILERTRAEL
DTVCKHNYEGFETHTSLRRLEQPNVVISLSRTEALNHHNTLVCSVTDFYPAKIKVRWF
RNGQEETVGVSSTQLIRNGDWTFQVLVMLEMTPRRGEVYTCHVEHPSLKSPITVEWRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /rpt_family="(CT)n"
complement(94032. ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /rpt_family="PB1D7"
90233. .90519
                                                                                                                 complement(109921.
                                                                                                                                           complement(109511. .109920)
                                                                                                                                               /rpt_family="ORRIA2"
complement/10077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement(104198.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /rpt_family="L1M4_orf2"
complement(90520. .9061
110723. .110766
/rpt_family="(CAT)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /rpt_family-"B1-F"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QSESAWSKMLSGIGGCVLGVIFLGLGLFIRHRSQKGPRGPPPAGLLQ"
                                                                                                                               rpt_family-"Lx"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rpt_family="RLTR11B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rpt_family-"(GGAA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="intron-exon boundaries defined in relation to In GenBank Accession Number M66213"
                                                                                                                                                                                                                                                                                                                                                                                                                     'rpt_family-"(CA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'gene="H2-IAbeta"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'gene="H2-IAbeta"
                                                                                                                                                                                                                                                                                                                                   rpt_family-"RMER19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          oin(98161. .98254,99610. .99882,102185. .102466,
02772. .102882,103310. .103333,103944. .103957)
                                                                                                                                                                                                                                                _famil
                                                                                                                                                                                                                                                                                                                                                                                                                                                   _family="B2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       _family="B1-F"
                                                                                   family="ORRIA3"
14. .110967
                                                                                                                                                                                                                                                                             _family="B3"
                                                                                                                                                                                                                                                                                                                                                               _famil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         family-"RMER17A"
                                                                      family="MYSERV"
                                                                                                                                                                                                                                                                                                                                                                                                         106455
                                                                                                                                                                                                                                    y="RMER19"
0877"
                                                                                                                                                                                                                  Y-"MYSERV"
                                                                                                                                                                                                                                                                                                                                                                            .106521)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .105779)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .100843)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .104650)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDNA
```

```
repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                   124375.
                                                    /rpt_family="L1ME2"
complement(125925. .125982)
/rpt_family="pB1D10"
                                                                                                                   complement(125171. .125368)
/rpt_family="B3A"
                                                                                                                                                                                                                                                                                                                                                                                                                   /product="lalpha subunit"
/db_xref="FID:g2555190"
/translation="MPRSRALIIGVLALTTMLSLCGGEDDIEADHYGTYGISYYQSPG
/translation="MPRSRALIIGVLALTTMLSLCGGEDDIEADHYGTYGISYYQSPG
DIGQYTFETOGDELFYVLDKKETVMMLPEFGQLASFDPQGGLQNIAVVKHNLGVLTK
RSNSTPATNEAPQATVFPKSPYLLGQPNTLICFVDNITPPVLNITWLANSKYYADGYY
ETSFFYNRDYSFHKLGYLTFTPSDDDIYDCKVEHWGLEEPVLKHWEPEIPAPMSELTE
TYVCALGLSYGLYGTVGTIFIIQGLRSGGTSRHPGPL"
                                                                                                                                                                 /rpt_family="B3"
124871. .125020
                                                                                                                                                                                              /rpt_family="RMER15"
124561. .124774
                                                                                                                                                                                                                                                                                                                                                   /rpt_family="(GA)n"
complement(121877.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement(join(117617...117869,118001...)
118421...118702,119134...119382,122528...;
/product="TARIPha"
complement(117617...117622)
/gene="H2-TARIPha"
complement(117617...122528)
/gene="H2-TARIPha"
                                                                                                                                                 rpt_family="B3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement(join(118021 .118175,118421 .118702,
119134 .119382,122528 .122612))
note="exons defined in relation to cDNA in database,
GenBank Accession Number K01922 and EST AA260586"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complement(117275. .117353)
/rpt_family="PB1D7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /rpt_family="(CATA)n"
complement(114546..115184)
/rpt_family="RMER12"
complement(118802..117079)
/rpt_family="MTE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /rpt_family="RMER6A" complement(112607. 112007./rpt_family=""
                                                                                                                                                                                                                                                                         rpt_tamily="
                                                                                                                                                                                                                                                                                                                                                                                             rpt_family="(CA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                  119667. .119709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /ipt_family="BGLII"
114458. ]TAREA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /rpt_family="RMER6A"
complement(112081. .112376)
/rpt_family="ORRIA3"
complement/11777.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /rpt_ramıı
113056. .1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rpt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement(112890. .113055)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /rpt_family="MYSERV" complement(111971. ...
                                                                                                                                                                                                                                                                                                     family-"MLT2E"
                                                                                                                                                                                                                                                                                                                                ramily-"PB1D10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            _family="RMER6A"
lement(117900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  family="RMER19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             family="RMER19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8. .111483
family="RLTR11A"
                                                                                                                                                                                             124774
                                                                                                                                                                                                                                                                                                                        .24078
                                                                                                                                                                                                                                     "(CA)n"
                                                                                                                                                                                                                                                                        MLT2CA"
                                                                                                                                                                                                                                                                                                                                                 .121980)
                                           RESULT
AC005507
                                                                                                           밁
                                                                                                                                      Ş
                                                                                                                                                                      밁
                                                                                                                                                                                                 δã
                                                                                                                                                                                                                                ₽
                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                DEFINITION
                                                                                                                                                                                                                                                                                         Query Match 3.4%;
Best Local Similarity 54.5%;
Matches 85; Conservative
                                                                                                 49810 AAGCAAAACAAAACAAAAACCAGACTAGGAA 49845
                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                              AGTCAAAATAAAACAACCAGAAAACCCCCTGAAGGAA 1164
AC005507 175817 bp DNA HTG 02-DEC-1998
*** SEQUENCING IN PROGRESS *** Plasmodium falciparum 3D7 chromosome
                                                                                                                                                                                                                                                                                                                                                                                     35324
                                                                                                                                                                                                                                                                                                                                                                                     ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(137151.
/rpt_family="(GA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(136784. .136887)
/rpt_family="B1-F"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(134802. .135034)
/rpt_family="B3"
134827. .134906
                                                                                                                                                                                                                                                                                                                                                                             /rpt_family="(CA)n"
32541 c 32732 g 37590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement(134858.
/rpt_family="B3A"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(134513, .134706)
/rpt_family="B3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rpt_family-"(TAAA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement(134046.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /rpt_far
133004.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /rpt_tamily="(GGAA)n"
complement(131734. .1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(130250. .130455)
/rpt_family="B3"
13133"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /rpt_family="(CAT)n"
129374. .129575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /rpt_family="pB1D7"
:Omplement.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rpt_family-"(CAGA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rpt_family="B4A"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /rpt_family="PBID10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /rpt_family="(AC)n" complement(128282.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rpt_family="(GT)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'rpt_family="Lx9"
.33785. .133903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rpt_family="B1-F"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /rpt_family="RSINE1"
129526. .129547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /rpt_family="B3"
127841. .127890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       127683.
                                                                                                                                                                                                                                                                                                                                                                                                                family="(CATA)n"
)1. .137254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             family-"B3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        family-"B1_MM"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .127870
                                                                                                                                                                                                                                                                                      Score 43.6; DB 13;
Pred. No. 0.89;
1; Mismatches 70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .137200)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .136550)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .135034)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .132371)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .131934)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .131856)
                                                                                                                                                                                                                                                                                 70;
                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                 Length 138187;
```

gene

polyA_signal

SGC

repeat_region repeat_region repeat_region repeat_region repeat_region repeat_region repeat_region repeat_region repeat_region repeat_region

0;

Gaps

0;

repeat_region repeat_region

repeat_region

```
REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NID .
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g3947406
HTG; HTGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94304,
On Dec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12 PFYACI
AC005507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (21-AUG-1998) Stanford DNA Sequencing and Center, Stanford University, 855 California Avenue,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 (bases 1 to 175817)
Hyman,R.W., Qin,F., Fung,E.L., Conway,A.B. and Davis,R.W.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Alveolata; Apicomple
1 (bases 1 to 175817)
Hyman, R.W., Fung, E.L., Qin, F.,
Plasmodium falciparum 3D7 chrom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            malaria parasite P. fa
Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                *** WARNING: Phase 1 High Throughput Genome Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              as runs of N as a convenience only. When sequencing is complete, the sequence data presented in this record will be replaced by a single finished sequence with the same accession number.

1 4352: contig of 4252 bp in length
4253 4302: gap of unknown length
4303 13546: contig of 9244 bp in length
13547 13596: gap of unknown length
13547 13596: gap of unknown length
13597 30155: contig of 16569 bp in length
30166 30215: gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      which the order is not known; their order in this record is arbitrary. In some cases, the exact lengths of the gaps between the contigs are also unknown; these gaps are present the contigs are also unknown; these gaps are present the contigs are also unknown; these gaps are present the contigs are also unknown; these gaps are present the contigs are also unknown; these gaps are present the contigs are also unknown; these gaps are present the contigs are also unknown; these gaps are present the contigs are also unknown; the contigs are also unknown; the contigs are also unknown; the contigs are present the contigs are also unknown; the contigs are present the contigs are also unknown; the contigs are present the contigs are also unknown; the contigs are present the contigs are also unknown; the contigs are present the contigs are also unknown; the contigs are present the contigs are present the contigs are also unknown; the contigs are also unknown; the contigs are also unknown; the contigs are also unknown; the contigs are also unknown; the contigs are also unknown; the contigs are also unknown; the contigs are also unknown; the contigs are also unknown; the contigs are also unknown; the contigs are also unknown; the contigs are also unknown; the contigs are also unknown; the contigs are also unknown; the contigs are also unknown; the contigs are also unknown; the contigs are also unknown; the continuent are also unknown; the continuent are also unknown; the continuent are also unknown; the continuent are also unknown; the continuent are also unknown; the continuent are also unknown; the continuent are also unknown; the continuent are also unknown; the continuent are also unknown; the continuent are also unknown; the continuent are also unknown; the continuent are also unknown; the continuent are also unknown; the continuent are also unknown; the continuent are also unknown; the continuent are also unknown; the continuent are also unknown; the continuent are also unknown; the continuent are also unknown; the co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dec 2, 1998 this sequence version replaced gi:3785954.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PFYACB8-628
    167062
170057
170107
170107
173046
173096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       109462
109512
                                                                                                     163906
167012
                                                                                                                                                                    157106
157156
160655
160705
                                                                                                                                                                                                                                                  153136
153186
                                                                                                                                                                                                                                                                                                                                                                              136223
136273
                                                                                                                                                                                                                                                                                             47998
                                                                                                                                                                                                                                                                                                                                       142677
                                                                                                                                                                                                                                                                                                                                                            142627
                                                                                                                                                                                                                                                                                                                                                                                                                       129801
                                                                                                                                                                                                                                                                                                                                                                                                                                            120332
120382
129751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  65485
90085
90135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62652
65435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         54665
54715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4253
4303
13547
13597
13597
30166
30216
40516
40516
48777
48827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HTGS_PHASE1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequence is unfinished. It consists of 23 contigs
                                                                                                     167011:
167061:
                                                                                                                                                                                                                                                    153185:
157105:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                109461:
                                                                                                                                                                                                         160654:
                                                                                                                                                                                                                                 157155:
                                                                                                                                                                                                                                                                                             1531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             109511:
                                                                                                                                              .63905:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           genomic sequence; HTGS phase 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               falciparum
                                         gap o
                                                                                                   gap of contig
                                                                                                                                                                                                                                                                                                                                    gap of contig
  gap of contig
                                                                                                                                                                                   gap of
                                                                                                                                                                                                                                                                                                                                                                                                 gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                cont
                                                                                                                                                                                                                            gap of
                                                                                                                                                                                                                                                                      gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Apicomplexa; Haemosporida; Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of unknown length
tig of 8211 bp in 10
of unknown length
tig of 5838 bp in 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                chromosome
                                      f unknown
of 3499
of 3499
ounknown
ounknown
of 3106
ounknown
of 3295
ounknown
of 2939
                                                                                                                                                                                                                                              y of 6422
f unknown
g of 6354
f unknown
y of 5271
f unknown
y of 5138
f unknown
of 3920
                                                                                                                                                                                                                                                                                                                                                                                                                                      f unknown
g of 9369
f unknown
  unknown
of 2722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unknown length
of 10820 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unknown length
of 24600 bp in length
unknown length
of 19327 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of 10300 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tamaki,T.,
mosome 12
                                                                                                                                                                                                                                                                      bp in l
                                                                                                                                                                                                                                                                                                               bp in l
length
length
bp in :
                                                                                                                                                                                                                                                                                                                                                        bp in length
                                                                                                                                                                                                                                                  ď
                                                                                                                                                                                                                                                                                                                                                                                                                  bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                              bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bp in length
                                                            Length
                                                                             nr dq
                                                                                                     Length
                                                                                                                         g
                                                                                                                                                                                                         bp in
                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bp in length
                                                                                                                                            length
                                                                                                                                                                                        length
                                                                                                                                                                                                                            length
                                         in length
                                                                                                                                                                in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in length
  length
                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                length
                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kurdi, O.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and Davis, R.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Technology
Palo Alto,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          presented
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ç
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 1
CEMYO2/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29300 TTAATAATTATTTTTAAATCTCCTTCATATGAAAT 29335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29240
                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                          exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            744 TCCAGAAAAAAAAAAGTAGGATACTTACAATCCATAACATCCATATGACTGAACACTTGT 803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAAGAACTAAAAATGCAATTTAGGTAATCTTACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGAATATTTTAATAAAATGAATTTATCTTTAACTTATAAATTAATCTTTCCAGTAATAT 29299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             85;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       J. Mol. Biol. (1988) In press SG 25-39 and lambda sup3-2; see J01050 for overlapping see Entries M37233, M37235 and M37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dibb, N.J., Maruyama, I., Krause, M. Sequence analysis of myosin heavy caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Biology, Hills Road,
2 (bases 1 to 10780)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (30-JUN-1988) Karn J., MRC Laboratory Biology, Hills Road, Cambridge, United Kingdom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryotae; mitochondrial eukaryotes; Metazoa; Nematoda; Secermentea; Rhabdittia; Rhabdittida; Rhabdittina; Rhabdittida; Rhabdittida; Caenorhabdittis.

1 (bases 1 to 10780)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            myo-2 gene; myosin; myo
Caenorhabditis elegans
Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CEMYO2 10780 bp
Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Karn, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              68768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ω
/product="myosin heavy chain 2"
/db_xref="pib:g295767"
/db_xref="pib:g295767"
/db_xref="swiss-pron:pi2845"
/translation="mdyendpgwkylrrsreemiodoskknvwipdsedgyle
/translation="mdyendpgwkylrrsreemiodoskknvwipdsedgyle
/translation="mdyendpgwkylrrsreemiodoskknvwipdsedgyle
/translation="mdyendpgwkylryskylrycknytodoskreemiodoskknvwipdsedgyle
/translation="mdyendpgwkylrykrykopdoskreemiodoskknvwipdsedgyle
/translation="myosin"/dokumentodosknvwipdsedgyle
/translation="myosin"/dokume
                                                                                                                                                                                                                                 join(1727. .1789,1900. .2028,2084. .2224,2274. .2748,
2804. .2985,3034. .3193,3454. .4745,4798. .7334,7381.
7580. .7870,8060. .8341,8388. .8528)
                                                                                                                                                                                                                                                                                                                                                          <1727. .1789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Plasmodium
/db_xref="taxon:5833"
/chromosome="12"
18961 c 19291 g 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
1. .175817
                                                                                                                                                                                                                                                                                                                                                                                   /tissue_type="muscle
/clone="lambda"
                                                                                                                                                                                                                                                                                                                                                                                                                                          /strain="Bristol N2"
/db_xref="taxon:6239"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Caenorhabditis elegans"
/strain="Bristol N2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                            /number=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      myosin heavy chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19291 g 67639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 42.4; DB Pred. No. 1.8; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA INV 29-MAR-1993 myo-2 gene for myosin heavy chain 2 (MHC-C).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence
1 M37236 aı
                                                                                                                                                                                                                                                                                                                                                                                                              (pharynx)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          falciparum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and Ka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          are all
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Karn, J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1158 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       fragments of this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 175817;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of Molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                               .7531,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

LEDQIVQTNPVLEAFGNAKTVRNNNSSRFGKFIRIHFSKQGRVASCDIEHYLLEKSR

```
NEEKPEPERKAGAAAAAKGTAGAKKKGKSGSFMTVSMLYRESLIKKLMTMLISTHPHF
IRC I I PNEKKASGV I DAGI VLAGITCHGYVSKI Z RESLIKKLMTMLISTHPHF
IRC I I PNEKKASGV I DAGI VLAGITCHGYVSKI Z RESLIKKLMTMLISTHPHF
IRC I I PNEKKASGV I DAGI VLAGITCHGYVSGI R CCKGEP NRTILHD DFYQRYALLAA
DES I I GKTDAKKGSGALMLARLYKEKK LEEDEN RYGLIKVEF KAGI VAHLEDLEDQSLA
QLITGLQAQI EWYYQTI ERKRIVEK KLEEDEN RYGLIKVEF KAGI VAHLEDLEDQSLA
NSGK I EAQY EKLQETVATLKDTYVQEEEKK RQLOEGAERLIKETADLLAQLEASKGST
RVEERMTAMMIGKVALLEGKLADAS KKLEVEBARAVEI INKOKKLVEAECADLKKNCOD
YOLISLRKVEBAEKNAKEHQ I RALODEMROODENI SKLIKEKKNQEEQNKKLTEDLQAAE
KODANAKLKAK LMOSLED SEOTMEREKRADMKNKRKAEGELK I AQETLEELJAKS
KSDAENALRRETELHT LGMKLEDEQAAVAKLOK GI QODEARVKDLUDGLADEKDARQ
LTVLKKKGSDA I QELSDQ I EQLOKOKGTI EKEKGHMQARFDESCAALDOEAKLRADQE
RIAKGY EVOTTSELHTLAGKKLEDEQAAVAKLOK GI QODEARVKDLUDGLADEKDARQ
RIAKGY EVOTTSELHTLAGKKLEDEQAAVAKLOK BI SEDEVAGKRALDOEAKLRADQE
RIAKGY EVOTTSELHLADAS KOKADAVAKLOK RUSENDDLADCNAKTVALENARSR
KSDAENALRRETELHT LGMKLEDEGAAVAKLOK BI SEDEVAGKRASRGLK
KASVELDOWRTKF TETGLI I GADEFDEVYKRONG TISELEQLKES I EDEVAGKRASRGLK
KASVELDOWRTKF TETGLI I GADEFDEVYKRONG TISELOBALDACNAKTVALENARSR
LYARDANRLEAEHHAQAVSSLEKKOKA PEDEVKKVDDLY LELDGAQRDARGS
SEBLIKGGDDALDANRLEAEHHAQAVSSLEKKOKA PEDEVKKVDDLY LELDGAQRDARGS
KEELQAGLDSAALESEESKALRCOI EVSOTREBKKKVDDLY LELDGAQRDARGLS
SEBLIKGGDDT LADOVEGLARENKSLSDETROLTESLSEGGRATHALSKNLTRILEME
KEELQAGLDSAALESEESKALRCOI EVSOTREBKKSLDEGGRATHALSKNLTRILEME
DSIQATILSSETKARSEEFENKKKLEBDAI INELEI ALDHANKANEDAQKNITRKYLDOI RE
LOOTVDEEOKRREFFEHIL AASERI AAREKT AVAKOPOFET. TVKLEA TABARDVESTGVERHO
                          /number=11
8342. .838
                                                                            8060.
                                                                                                                                                                                 /number=9
7580. .78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /number=5
303/
                                                                                                                            /number=10
7871. .805
                                                                                                                                                                                                                                                                                                                                  /number=8
7335. .738
                                                                                                                                                                                                                                                                                                                                                                                    /number=7
4798. .73
                                                                                                                                                                                                                                                                                                                                                                                                                                    /number=7
4746. .47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /number=6
3454. .474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /number=6
3194. .3453
number-11
                                                                                                 'number=10
                                                                                                                                                                                                                                                     number=9
                                                                                                                                                                                                                                                                                  7381
                                                                                                                                                                                                                                                                                                       'number-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /number=5
2986. .30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ehnnelnsqnvalaaaksqldne iallnsd iaeahtelsasedrgrraasdaaklaed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /number=4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AEEQANSHLSKYRTVQLSLETAEERADSAEQCLVRIRSRTRANAEQK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   number=4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2084.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       number=2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VIRQAPGERSYHIFYQVFSDYLDNLKKDLLLNKDVKDYWFIAQAELIIDGINDKEEHQ
LTDEAFDILKFTPTEKMECYRLVAAMMHMGNMKFKQRPREEQAEPDGTDDAERAAKCF
GIDSEEFLKALTRPRVKYGNEWYNKGQKIEQVNWAVGAMAKGLYSRIFNWLVKKCNQT
LDQKGISRDHFIGVLDIAGFEIFDFNSFEQLWINFVNEKLQQFFNHHMFVLEQEEYAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'number=3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          number=2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      number=3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'number=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .2028
                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 11
AC006101/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   717
```

exon

intron

intron

number=12

0

Gaps

0

exon

intron

exon

exon

intron

exon

intror

exon

intron

intror

exon

exon

intron

intron

intron

```
Query Match 3.3%;
Best Local Similarity 45.0%;
Matches 135; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1105 TTTTTTTTTTGGGCTTTGGGAAAAGTCAAAATAAAACAACCAGA----AAACCCCTGAA 1160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1045 AAATAAAATATTTAGCCCTTCCTTGGTAGGTTCTCTCTAGAATTTAATTRTGCTTTT 1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             597 TATTACAGACAGTTACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   777 AAGGATACTACTCAGATATAAAATGTTACGACGTTTTTCAATACTTTTANATTTCATTTT 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATTYCAAAAGGCTGCTG 1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGTACAAGGTATAATTATGCTTATCAAAACTCGAATTGCAACCTGGTCAGGAGTAATTAT 598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGTTTCTTGTAGCTTATGGGGATGTCCACAATAAAACGTCCACAGCACAAAACCCCACAA 658
                                                                                                                                                                                                                                                                                     * sequencing is complete, the sequence data presented in record will be replaced by a single finished sequence with the same accession number.

* 45025 contig of 45025 bp in length 48270; gap of unknown length 48271 li2277; contig of 64007 bp in length 112278 li55644; contig of 40123 bp in length 115522 li55644; contig of 40123 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
Submitted (04-DEC-1998) Genome Therapeutics Corporation, 100 Beaver
Street, Waltham, MA 02154, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Smith, D.R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequencing of Human Chromosome 10 Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

[ (bases 1 to 155644)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC006101 155644 bp DNA HTG 04-DEC-1998
*** SEQUENCING IN PROGRESS *** Homo sapiens chromosome 10 clone
CIT-HSP-1338F24; HTGS phase 2, 3 ordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HTG; HTGS_PHASE2.
                                                                                                                                                  43051 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This sequence is unfinished. It consists of 3 contigs for which the order is known. The lengths of the gaps have been estimated by the submitter but are not known exactly. When
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WARNING: Phase 2 High Throughput Genome Sequence ***
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bases 1 to 155644)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3364 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="CIT-HSP-1338F24"
                                                                                                                                                                                                                                                             1. .155644
                                                                                                                                             /chromosome="10"
31296 c 30076
                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2316 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3.3%;
                                                                                                                                    30076 g 44716 t
Score 41.4; DB 18; Length Pred. No. 3.2; 2; Mismatches 163; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2266 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 42; DB 3; Length 10780; Pred. No. 1.9; O; Mismatches 87; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2826
                                                                                                                                       6505 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                   data presented in this
                                              Length 155644;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     α
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC004557/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                먉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FOCUS
FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                   SGS
                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1148 GAAAACCCCTGAAGGAAGTAAGATGTTTGAAGCTTATGGAAATTTGAGTAACAACAGCT 1207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTGANCTGAGAGCAATTYCAAAAGGCTGCTGATGTAGCCCCCGGGTTNCCTNTNTCTNAA 1267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTAATGCCACTAACCATTAAATATATGTTCATCTATTTCATTTCTTAGATGTTCATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAAACCATTTTAACTGGTCAAGTGAGATAAGTACATTGAAATTAGCCTTAATGTTTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCACATTGAAAAACTTTTATATGTTGTAATCTTACCGCAAAGGCAGAATTTTACGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTTAATTRTGCTTTTTTTTTTTTTTTTGGGCTTTGGGAAAAGTCAAAATAAAACAACCA 1147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAAATGTCCCTGATCAAAAATATGGTCTTAGTCCTAAATGATTGGCTACATTGGTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTTTTTTATGTTAAAATATTTCAAAATAAACAAATTTACAACTGTACTTGAATGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTTTGATGTACATTAATGTTGGGATATGGAATGAAGACTTAAGAGCAGGAGAAGATGGG 1027
                                                                                                                                                                              Direct Submission
Submitted (01-DEC-1998) Arabidopsis thaliana Genome Center Submitted (01-DEC-1998) Arabidopsis thaliana Genome Center Department of Biology, University of Pennsylvania, 38th St Hamilton Walk, Philadelphia, Pennsylvania 19104-6018, USA On Jun 16, 1998 this sequence version replaced gi:3097814.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                   Submitted (16-JUN-1998) Arabidopsis thaliana Genome Center, Department of Biology, University of Pennsylvania, 38th Str Hamilton Walk, Philadelphia, Pennsylvania 19104-6018, USA (bases 1 to 99689)
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (14-APR-1998) Arabidopsis thaliana Genome Center, Department of Biology, University of Pennsylvania, 38th Street Hamilton Walk, Philadelphia, Pennsylvania 19104-6018, USA 3 (bases 1 to 99689)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g3228389
HTG.
                                                                                                                                                                                                                                                                                                                   Ecker, J.R
                                                                                                                                                                                                                                                                                                                                                                                                                                         Ecker, J.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Shinn, P., Buehler, E., Conway, A., Conway, A., Vysotskaia, V., Yu, G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Arabidopsis thaliana
Eukaryota; Viridiplantae; Charophyta/Embryophyta group;
Embryophyta; Tracheophyta; euphyllophytes; Spermatophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence.
AC004557
                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ecker, J.R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC004557 99689 bp DNA PLN 01-DEC-1998 Genomic sequence for Arabidopsis thaliana BAC F17L21, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               thale cress.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Magnoliophyta; eudicotyledons; Rosidae; Capparales; Brassicaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to 99689)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 99689)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence for Arabidopsis thaliana BAC F17L21;hed (1998)
                                                    complement(join(71. .672,759. .858,941.
/note="5' end of T7N9.22 (gi|2213602);
that overlaps Sp6 end of T7N9; similar
                                                                                                                 /organism="Arabidopsis thaliana"
/db_xref="taxon:3702"
/chromosome="1"
/evidence=not_experimental
/product="F17L21.1"
                                        /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dewar,K., Fe, Kurtz,D., Oj, Davis,R.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Feng, J., Kim, C., Li, Y., Sun, H., Oji, O., Shen, Y.K., Toriumi, M., ., Federspiel, N.A., Theologis, A. and
                                                                       . .1801))
                                                  3' partial gene
to EST gb[N96069"
                                                                                                                                                                                                                                                        Street
                                                                                                                                                                                                                                                                                                                                                                        Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9367
                                                                                                                                                                                                                                                                                                                                                                        and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                CDS
                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
```

```
/evidence=not_experimental
/product="F17L21.6"
/product="F17L21.6"
/db_xref="pID:g3935163"
/translation="%EEVYHDEPEKFNHILHLIRDYFNHRDDRARITACMGELMRDHL
NLLVRFFDFFPAEASEGLAQLQTIAATSVSPDSTIDDAVSYLNTVKEAFHDEPAKYYE
FFQLFYDIRYRYVLLCPSSILFALNFKSQSIOHCEVILFVIYYSLCRLIDVAGGITRV
EELLKAHKNLLVRLNAFLPPEAQRILHLKIEQRAASDINKRKRVASFIGKLKERFQGD
DRHYYESFLEILTMYQEGNKSVNDLYQEVGFLVGTLWLDYTFS"
join(19430..19507,19610..19831,20016..243
/note-"putative polyprotein (AF039376)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="pid:g3935161"
/trans1ation="MVGGGSKPRAUGEGSKPRATKDDAYAYLRAVRAKFHNDSKKYDDFV
/trans1ation="MVGGGSKPRAUGEGSKPRATKDDAYAYLRAVRAKFHNDSKKYDDFV
AVMTNEKARTIDROCIIKEVEQLIKGHRDLISGENAFLPKCLEIKNYYFGAGEDLEVV
YTAKRKLLARSVTKRSSSSSSSERDEPAKYRQFLSLLRDRARRIDKATFFVGLVEL
IKDHLDLLLGFNALLPARFQLFITPAGFONVVGRSVPPETTIEDATSYLNSVKRAFHD
EPAKYEELLKLLNDIEARRYDAASFIASVEELMKDHQTLLNGFSVFLASMKYKRAFHD
EPAKYEELLKLLNDIEARRYDAASFIASVEELMKDHQTLLNGFSVFLASMKYKRIFSDF"
join(15962...16104,16188...16481,16578...16695,16782...1688
                                                                                                                                                                                                                                                                                                                                                                                                                                                   EVRALIQGHEDLLMELSEIFSDP" 
join(17912. .17988,18081.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /translation="MVGKSKSPEFNFEDGMAYFDAVKVALQDTEPEKYQEFVRIFIDY
TANNEGFETLSASLQELLRDHANLCHGSNVLLPFRLQTAIPPEASAEFHINKVVGRSV
PPAVAVPTMDDATSYLNAVKEAFHDEPAKYMEITKLLTDLKARRINAASVIARMEELL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Join(12453. .12613,12749. .12879,13398. .13479,13874. .13939, 14016. .14285,14382. .14499,14602. .14703,14781. .14852) /note="hypothetical protein similar to T7N9.25" (g1/2213605)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /evidence=not_experimental
/product="p17:21.3"
/product="p11:21.3"
/db_xref="p11:3935160"
/t-anslation="MYERRYQVEPTLSDAHSYITAVKEAFHDEPTKYEEFIKLMNDIR
DHGVDKASGIAKLTELIKGHPRLLRGLSFFFPQVNRDIHHBAKRTIILKDKAATIPPEA
AYRGAKSTYTKIKQIEPDWENFMNMLKTRFRSLDTHVVESFLKIMINYDEGKKSEKEV
QEEVVDLLYYHEDLIDKFFRLFNMRK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /evidence=not_experimental
/product="F17L21.2"
/product="F17L21.2"
/db_xref="P1D:g3935159"
/translation="MAGEGSKPKATVDDAYAYIRTVKSTFHNDPDKYDDFMAIMKNFK
/KRIDRNTCIEVKELKGHROLISGRNAFLPKCELFADWYNLEGRTYESLLMGNTRN
FELHNLIFIGHWRKKESNAIIKWFRSTNKADRLAKGELENNVTFVSHSTR"
join(10122..10261,10378..10624,10700..10801,10890..10961)
/mote="hypothetical protein similar to T7N9.24
                                                                                                                                                                                                                                                                                                                                                                                   /note="hypothetical protein"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KDHLNLLLGFCVFLSPTRRFITKLKARFLGDGSQVVDSVLQILRMHSEGNKSKDEASQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /evidence=not_experimental
/product="F17L21.5"
/db_xref="PID:g3935162"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /evidence=not_experimental
/product="F17L21.4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GSIITAGGAGTKPVLDWLVPVLIEFLSSEDWAARKSAAEALGKVATAEDLASQYKKTC
TTALESRRFDKVKSVRETMNRALNLWKEVSTDDEASLSPSRSSTDDGNIGCFSSVTRS
STIDVGLKSARPKKVTPIMKRSPSLPVNRSYAATRQKENLPKRNQGNMTMLVEEASSV
DNKGPHFTPVKKSSEETEEKANSGGPDIIKHTISEKSREDSKVSSFGGLRSGSRVAPC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /translation="MSVHGRFPASPPISLSPSSSSTSPSSQSPSTPPDLKQRVIACLN
KLADRDTLALASAELDSIARNLTHDSFSPFLNCIHNTDSSVKSPVRKQCVALLSVLSR
YHGDSLTPHLAKMVSTVIRRLRDPDSSVRSACAVATADMSAHVTRQPFASVAKPLIET
LIQEGDSNLQIGAALCLAASVDAATDPESEQLRKSLFKIGKLLKSDGFKAKAALLSAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SDDGDSVKNCKDDVEESKKDSEELSLIREQLALIENQQSSLLDLLQVYTWSLISIVSL
YVDKLFGYECCR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (gi|2213604)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (91/2213603)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="hypothetical protein similar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="PID:g3935158"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .17034)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .7830,7965.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .8093,9131.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .9329)
r to T7N9.
                                                                                                                                                                                                                                                                                                                                                                                                                                                .18875)
```

'evidence=not_experimental

```
/product="F17L21.11"
/db_xref="pid:q3935168"
/db_xref="pid:q3935168"
/taanslation="MSLFHVLGFGVKIGHLFWMLCCWFVSWFVDNGIEDKSGLLVGSV
GDLEKTKMTTLKKKNKNWFWNKISSSGLKIPSFSYQFLGSVKFNKAWWRKLVVVWVVF
WYLVSIWTFNYFSSQAMEKRKETLASNGDERARMLQDQFNVSNNHVQAMSILISTFHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="PID:g3935167"
/translation="MDPDAVARAFVEHYYSTFDANRPGLVSLYQEGSMLTFEGQKIQG
SQNIVAKLTGLPFQQCKHNITTVDCQPSGPAGGMLVFVSGNLQLAGBQHALKFSQMFH
LISNGGNYYVENDIFFLNYA"
join(31665. .32171,32453. .32734,32937. .33106,33195. .3369
33784. .33855,33950. .34179,34268. .34366,34453. .35558,
35648. .35827,35899. .35986,36081. .36149)
/note="similar to sensory protein bara (sp)P26607);
similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289); similar to histidine kinase A (gi|1136289)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement(join(28500. 28571,29379. 29675)), note="similar to nuclear transport factor 2; ESTs gb|T21347, gb|N96312, and emb|F20149" /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MESSEDVENLSRAIEKLLHEKRKREASGDAFIEDADDQLFLSSLISQLESPNPKGKEDVITGEEEEKEEESADSSPSKGKSEGQRQLEESIEEIAKDIKKVKKONKITHVLLSATIILITLVRQLSEYSMIFMLKDRISBPVRSIGGMLNGMFKGKLRPIKNQLAGTSNSNDQNNGNGSHTGPLQVPELLREFGFDDECTIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /evidence=not_experimental
/product="p17L21.8"
/product="p11L21.8"
/db_xref="p1D:g3935165"
/tanslation="MMRRORDEQQSRVFYDLSSLVLNLLRSPPMPISLPDHFPDPPAR
IRPPFSSHRFSSSSPSLRHISPSGFASILLGISVALMLCGSVTFFIGFLLMPWVLALI
LVFYVAGIVSAISMVGRSILCYVLTPPSPSGKEISEWKLL"
join(27209. .27349,27618. .28079)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="unknown; similar to ESTs gb|T42386, gb|H36247, gb|N38423, gb|T21830, and gb|AA585725"
GKIPSAIDQRTFSEYTDRTSFERPLTSGVAYAMRVLHSEREEFERQQGWTIRKMYSLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /evidence=not_experimental
/product="F17L21.9"
/db_xref="PID:g3935166"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /evidence=not_experimental
/product="F17L21.10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VLRYLAGTATHGILLRSNSPLSLHAFSDADWAGDNDDFVSTNAYIVYLGSTPIAWSSK
KQKGVARSSTEAEYRAVANTTSEIRWVCSLLTELGITLPKMPVIYCDNVGATYLSANP
VFHSRMKHLALDYHFIRDNVSAGALRVSHISTHDQLADALTKPLPRQHFLQFSSKIGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="f17121.7"
/db_xref="PID:g3935164"
/db_xref="PID:g3935164"
/translation="MFINIVNRVIQVNCWSHTWHEASCLQVFDTKTQTCDPKPTPCSE
/translation="MFINIVNRVIQVNCWSHTWHEASCLQVFDTKTQTCDPKPTPCSE
/translation="MFINIVNRVIQVNCWSHTWHEASCLQVFDTKTQTCCDPKPTPCSE
/translation="MFINIVNRVIQVNCWSHTWHEASCLQVFDTKTQTCTPCSE
/translation="MFINIVNRVIQVNCWSHTWHEASCLQVFDTKTQTCTPCSE
/translation="MFINIVN"
/**TRIGGFDYKTLCLDGKFHVGPVPVDKTRIRLADYGGKRAVLWPNNIHSLRKMIWCAESF
/**TRIGGFDYKTLCLDGKFHVGPVPVDKTRIRLADYGGKRAVLWPNNIHSLRKMIWCAESF
/**TRIGGFDYKTLCLDGKFHVGPVPVDKTRIRLADYGGKRAVLWPNNIHSLRKMIWCAESF
/**TRIGGFDYKTLCLDGKFHVGPVPVDKTRIRLADYGGKRAVLWPNNIHSLRKMIWCAESF
/**TRIGGFDYKTLCLDGKFHVGPVPVDKTRIRLADYGGKRAVLWPNNIHSLRKMIWCAESF
/**TRIGGFDYKTLCLDGKFHVGPVPVDKTRIRLADYGGKRAVLWPNNIHSLRKMIWCAESF
/**TRIGGFDYKTLCLDGKFHVGPVPVDKTRIRLADYGGKRAVLWPNNIHSLRKMIWCAESF
/**TRIGGFDYKTLCLDGKFHVGPVPVDKTRIRLADYGGKRAVLWPNNIHSLRKMIWCAESF
/**TRIGGFDYKTLCLDGKFHVGPVPVDKTRIRLADYGGKRAVLWPNNIHSLRKMIWCAESF
/**TRIGGFDYKTLCLDGKFHVGPVPVDKTRIRLADYGGKRAVLWPNNIHSLRKMIWCAESF
/**TRIGGFDYKTLCLDGKFHVGPVPVDKTRIRLADYGGKRAVLWPNNIHSLRKMIWCAESF
/**TRIGGFDYKTLCLDGKFHVGPVPVDKTRIRLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYGGKRAVLWPNNIHSLADYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RFDQLALLGKPMESEEQMEVIVEGLSDDYKQVIDQIQGREVPPSLTEIHEKLLNHEVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KRSLNLNLAATLFFIIFHYFSFSSMASETVITSDSTSLLNVNMTNVTKLTSSNFLMWR
ROVQALLNGYDLTGYLDGSIVVPPATITANGAVTVNPAFKHWQRQDQLIYSALLGAIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ISVQPILSRTTTSAEIWTKLMDTYAKPSWSHIQQLRQQIKQWKKDTKSIDEFFQGLVM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   similar to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .33690
```

SdS

Sg

SdC

CDS

/evidence=not_experimental
/product="F17L21.16"
/db_xref="PID:g3935173"

(91|2673911

codon_start=1

CDS

```
/evidence=not_experimental
/product="p17L21.15"
/product="p17L21.15"
/db_xref="p10:q3935172"
/db_xref="p10:q3935172"
/db_xref="p10:q3935172"
/translation="MCOMMYSSQMDWEHLIMSNPSRTEDDSKQLPTEWEIEKGEGIE
SIVPHESGLERVSSGSATSFWHTAVSKSSQSTSINSSSPEAKRCKLASESSPGDSCSN
IDFVQVKAPTALEVSVASAESDLCLKLGKRTYSEEYWGRNNNEISAVSMKLLIPSVVA
GKSKLLGQSMPVPRCQIDGCELDLSSAKGYHRKHKVCEKHSKCPKVSVSGLERRECQQ
complement(join(49339. .49493,49603. .49851,49967. .50088,50218. .50882))
/note="similar to squamosa-promoter binding protein"
                                                                                                                                                                 CSRFHAVŠEFDEKKRŠCRKRLSHHNARRRKPQGVFSMNPERVYDRRQHTNNLWNGVŠL
NARSEEMYEWGNNTYDTKPRQTEKSFTLSFQRGNGSEDQLVASSSRMFSTSQTSGGFP
NARSEEMYEWGNNTYDTKPRQTEKSFTLSFQRGNGSEDQLVASSSRMFSTSQTSGGFP
AGKSKFQLHGEDVGEYSGVLHESQDIHRALSLLSTSSDPLAQPHVQPFSLLCSYDVVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /evidence=not_experimental
/product="p17L21.14"
/product="p17L21.14"
/db_xref="p1D:g3935171"
/tanslation="MTTSKRLADRKIEKFDKNILKRGFVPETTTKKGKDYPVGPILLG
FFVFVVIGSCESLGLQLAEAWHKPKHSQARRSSFQNVESSSVSFLFLSLYCRMCQLSV
YYIM"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /evidence=not_experimental
/product="F17L21:13"
/db_xref="p1D:93935170"
/db_xref="p1D:93935170"
/translation="MEEELAMLRQLIGQLQELLHNGSPPPPSSSSSLSSSSPSFLVLH
HPQYQNGWCLFCIEDTSADDCCDIVVAGGRAFGIFKMLETVKRPVKRFTKERFQGKSC
TEVDEISGNNDQEIWQEFPQDLFEDVSRLDMATFFQFFAVCRKWNALISDSFSRCF
TELPQTIPWFYTITHENVNSGQVYDPSLKKWHHPIIFALPKKSIVLPWASAGGIVCFL
DIGHRRFYVSNPLTKSFRELPARSFKWSRVAVGWTLNGNSTSHGXKVLWVCCEGEYE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(join(42083...42239,42509...42669,43
/note="unknown; similar to ESTs gb|T20610 and gb|AA586199"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VYDSLSNVWTKRGTIPSNIKLPVLLNFKSQPVAIHSTLYFMLTDPEGILSYDMVSGKWKQFIIPGPPDLSDHTLAACGERLMLVGLLTKNAATCVCIWELQKMTLLWKEVDRMPNIWCLEFYGKHIRMNCLGNKGCLILLSLRSRQMNRLITYNAVTREWTKVPGCTVPRGRKRLMIACGTAFHPSPTAAA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gb|T76780, gb|AA650733, and emb|Z17748"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        001n(46024. .46685,46846. .46967,47100. .47351,47455. .47600)
/note="putative squamosa-promoter binding protein
(AC002561)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'translation="MTTSKRLADRKIEKFDKNILKRGFVPETTTKKGKDYPVGPILLG
FFVFVVIGSSLFQITRTATSGGMA"
Join(39626. 39777,40491. 41742)
'note="similar to_fim protein; similar to ESTs gb|T422445,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence=not_experimental
/product="F17L21.12"
/db_xref="PID:g3935169"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LLANSVESSISEALCTGIDPFIVIVKPLRASMLAATLQRGLGIGIREPPOHKGPPALI
LRNLLLGRKILIVDDNNVNLRVAAGALKKYGADVVCAESGIKAISLLKPPHEFDACFM
DIQMPEMDGFEATRAIRDMEBEMNKRIKNGEALIVENGNKTSWHLPVLAMTADVIQAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SVEDTGVGIPVEAQSRIFTPFMQVGPSISRTHGGTGIGLSISKCLVGLMKGEIGFSST
PKVGSTTTFAVFSNGMQPAERKNDNNQPIFSEFRGMKAVVVDHRPARAKVSWYHFQR
LGIRVEVVPRVEQALHYLKIGTTTVNNILIEQEIWNREADDFIKKLQKDPLFLSPKLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           I HATVSRIHKVEEDCDKMKQLKKKAEAADVAKSQFLATVSHEIRTPNNGVLGWLHML
MDTELDVTQQDYVRTAQASGKALVSLINEVLDQAKIESGKLELEEVRFDLRGILDDVL
SLFSSKSQQKGVELAVYISDRVPDMLIGDPGRFRQILTNLMGNSIKFTEKGHIFVTVH
LVDELFESIGETASSPESTLSGLPVADRQRSWENFKAFSSNGHRSFEPSPPDINLIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QNYMKDDYDLEALEPSPYQEEYAPVIFAQDTVSHVVSLDMLSGKEDRENVLRARSSG
KGVLTAPFPLIKTINRLGVILTFAVYKRDLPSNATPKERIZATNGVLGGVFDIESLVEN
LLQQLASKQTILVNYYDITNHSQPIEMYGTNYSADGLERVSPLIFGDDLKKHENKGRY
LQLAHTYVCNFFLFARIQVLTFCCELLPLCRFKQKPPWPVLSMVTSFGIIVIALLVAH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           join(36949. .36951,37408. .37564,37737. .37783)
/note="unknown; similar to EST gb|AA650671 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HEECLKCGMDGYRIIRGDGAGRRTAKETQKLVSPMHLEVVEKQIDDCKKSVYRKAGVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .42669,43186. .43188))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gb[T20610"
```

Sg

Sg

```
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SdC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /Translation="MACKTILRSVFVSESRRTSGARRCFFLPPSPASVPVHGLFPAPK /Translation="MACKTILRSVFVSESRRTSGARRCFFLPPSPASVPVHGLFPAPK SLCFNGFASVPERATRLNCSHNDOSDOGPPQEAVLKAISEVSKTDGRVGKTINNIIGG TVADDSAKDWLELDQKVMTYFTERGFTAIGTGGNDFVHAMVANVESVIDRQIPEDCVK QTLSSKGKYVSVNIGPLQVVSSEQVQAYVNAMKRDERWKYFL" complement(join(57354.57465,57663.5776).57936..57983,58075.58244,58331.58409,58699.58770).7note="similar to TOM20 (X92491); similar to ESTs gb|T444475, emb|Z26777, and emb|Z26778"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /evidence=not_experimental
/product="F17L21.20"
/product="F17L21.20"
/db_xref="p1D:g3935177"
/db_xref="p1D:g3935177"
/translation="MVKYSQEPDNITKSCKARGADLRVHFKNTRETAHAIRKLPLNKA
/KRYLEDVIAHKQAIPFTRECRGVGRTAQAKNRHSNGQGRWPAKSAQFVLDLLKNAESN
AEVKGLDVDALFISHIGVUQAAKQRRRTYRAHGRINRMSSFLFDCFYNVCFFIHIVLT
LDLILSYAAYMSNPCHLELILSSKEEPVKKEPETQLAAKSKKGASS"
join(61)11. 61402,61486. 61688,61772. 61879,61963. 62628)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="PID:g3935176"
/translation="MEESTADEERLIMFEHARKNSEAQYKNDPLDSENLLKWGGALLE
/translation="MEESTADEERLITINPGKHQALWCIANAYTAHAFYVHDPEEAKEH
LSQFQPIPEAKLMLNDAISKLEEALTINPGKHQALWCIANAYTAHAFYVHDPEEAKEH
FDKATEYFQRAENEDPGNDTYRKSLDSSLKAPELHWQFMNQGMQQQILGGGGGGGGG
MASSNQSSKKKRNTEFTYDVCGWIILACGIVAWVGMAKSLGPPPPAR*
Join(59115...59117,59214...59250,59369...59409,59889...60119,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /translation="MKDRMERLLILPFSLGCSTQSCVAVATTHQQKKPNQLIKSTFLL TFLLVESDAKGSFRKDYTKMENNNGANISDGIYRIIRSFKSFSHFFIRYEEETKERE AEMEIGFPTDVKHLSHIGVDGTMTTFDNTSSSFPFSGFHLTGTVV" complement(join(55014...55070,55246...55329,55703...55816,56001...56104,56456...56705))
//note="hypothetical protein"
                                                                                                                                                                                                                                 VYSSSYVDPLYYFGRICGANOPPOVLLMRPDIAEEFRAVRIKSYSASDKTRMLAKEK
RWKRDSHSSLKRNKKRARIOVKCAKILEVD"
join(62993. .63429,63730. .63953,64026. .64405)
/note="similar to MIPP proteins (gi|2191178, sp|P28575)"
                                                                                                                                                                                                                                                                                                                                                                                                                                         VAVQLVADIIASHPSHDIIIAVDSLGKEDLLVHVSRILNIKIWVWPERLRIMHLLGFQ
DIFTIDTSLTRVRAVPRYSFSIQTLEGLNTMCPTIGIMPSGLPWVKRPFKGDDKLSGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="PID:g3935178"
/translation="MESGLISPORWRNGSQAYFLTHIHSDHTRGLSGGWSQGPLYCSR
/translation="MESGLISPORWRNGSQAYFLTHIHSDHTRGLSGGWSQGPLYCSR
TTASLIFPSRFPGFDLSLIARVVPLFSWTSLSLRSPSSGSTVRLHLMAIDAHHCPGSIMF
LFRGDFGCFLYTGDFRWDSDASDEARTTLYAAIDEFPVDILYLDNTYCNPIYSFPSRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         50204. .60464,60563. .60610)
60204. .60464,60563. .60610)
/note="similar to 60S ribosomal protein L17-2 (splp35267);
similar to ESTs gb|L33542 and gb|AA660016"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QCSRFHAVSEFDEKKRSCRKRLSHHNARRKKPQGVFPLNSERVFDRRQHTSMLWNGLS
LNTRSEEKYTWGTTYETKPTQMESGFTLSFQRGNGSEDQLFTGSTLSFSAFQTSGGFS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MDCNMVSSFPWDWENLIMSNQSKTENEKKQQSTEWEFEKGEGIE
SIVPDFLGFEKVSSGSATSFWHTAVSKSSQSTSINSSSPEDKRCNLASQSSPGDSSSN
IDFLQVKPSTALEVPIASAESDLCLKLGKRTYSEEFWGRNNNDLSAVSMNLLTPSVVA
                                                                                                                                                                                                                                                                                                                                                                                                FLTASMKNETVSAKKELEAAAVHKFHDYMYSVHYSDHSCYEEIGEFIKLVKPKSMKGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /evidence=not_experimental
/product="F17L21.21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /evidence=not_experimental
/product="F17L21.17"
/db_xref="PID:g3935174"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(join(52788.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RKKTKSCGQSMQVPRCQIDGCELDLSSSKDYHRKHRVCETHSKCPKVVVSGLERRFCQ
/db_xref="PID:g3935179"
/translation="MVVESSSSPIIPGLTDDVAELCVSKIPRSSFQITSQVCRRWRSF
LRSQHFAAVRKLTGTVEEFLCVLMESECGRDVYWEVFDASGNKLGQIPPVPGPLKRGF
                                                                                                                  /evidence=not_experimental
/product="F17L21.22"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /evidence=not_experimental
/product="F17L21.18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGKSNIQLPDKGVGECSGGLHESHDFYSALSLLSTTSDSQGIKHTPVAEPPPIFGTFP
                                                                                                                                                                                                        /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="F17L21.19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="PID:g3935175"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .52954,53423.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .53556,53832. .53974))
                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sg
```

```
PSSYRAAPGFGLDERGALEP HAGT VALUE PLANT IN PROJECT ON THE PROPERTY OF SAME P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AASSYSGIEGGVRRESGAAGNKGSTSEAASFSEMLKKSNSMKKVAAESTDATEGSKGG
GGKKKGKGRQIDPALLGFKVTSNRILMGEIHRADDF"
COMPDLEMENT (JOIN (73150. .73653,73910. .74151,74405. .74674)
/note="similar to multiple exostoses type II protein
EXT2.I (U72263); similar to ESTs dbj|D39982, gb|L37635,
and dbj|C28418"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /evidence=not_experimental
/product="F17121.23"
/product="F17121.23"
/db_xref="F1721.33"
/db_xref="F1721.33"
/db_xref="F1721.33"
/db_xref="F1D:33935180"
/translation="MAEGKFDLPDDLIFSKSSDOLKELASDNSIPLSPOWLYTKSSEY
/translation="MAEGKFDLPDDLIFSKSSDOLKELASDNSIPLSPOWLYTKSSEY
/translation="MAEGKFDLPDDLIFSKSSDOLKELASDNSIPLSPOWLYTKSSEY
/translation="MAEGKFDLPDDLIFSKSSDOLKELASDNSIPLSRAWBEERETGLL
KNDVRSPTPVERRIDSVSSRETGDLIKNAAASDRWNDVNSRAAVHEPRRDKWSSSRGD
DDKEKEARCEKVDINKDKEEPQSESQSVYSNVRATSERDSDTRDKWRPRHRMESQSGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(join(64930..65189,65274..65411.65541..6786
68016..68726,68873..68971.69070..69160,69275..70105,
70275..70345,70747..70813))
/note="unknown; similar to ESTs gb|N96209, gb|R87018,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gb|T21275, and gb|AA713070"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       join(76306.
                                                                                                                                                                                                                                                                                                                                                                                                                                     /evidence-not_experimental
/product-"F17L21.25"
/db_xref-"PID:g3935182"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="putative adenine phosphoribosyltransferase 1
(sp|P31166); similar to ESTs gb|N65531, gb|R90631,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RLVEAVVFGCIPVIIADDIVLPFADAIPWEEIGVFVAEKDVPELDTILTSIPTEVILR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LPFKSPRMMRSSIQLISSNWPYWNRTEGADHFFVVPHDFGACFHYQEEKAIERGILPL
LQRATLVQTFGQRNHVCLDEGSITIPPFAPPQKMQAHFIPPDIPRSIFVYFRGLFYDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="unknown; similar to gb|H76168, and gb|AA395332"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AFAEVNGLLYVIRGYSTDTYSLSNAEVYNPKTNQWSLMHCPNRPVWRGFAFAFSSKLY
AVGNGSRFIDIYDPKTQTWEELNSEQSVSYYSYTVVRNKYYFMDRNMPGRLGVFDPEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GVAVLDGGKIVFFGGYTEVEGSGINSTTVSASADVYEFDPANNSWRKLAGMNIPRYNF
/note="hypothetical protein"
/codon_start=1
                                                                                                                                                                                                                  LPELKGKEKLGETSLFVLVKSAA"
                                                                                                                                                                                                                                                                           /SLEYGTDTIEMHVGAVEPGERAIIIDDLIATGGTLAAAIRLLERVGVKIVECACVIE
                                                                                                                                                                                                                                                                                                                   /translation="MATEDVQDPRIAKIASSIRVIPDFPKPGIMFQDITTLLLDTEAF
KDTIALFVDRYKDKGISVVAGVEARGFIFGPPIALAIGAKFVPMRKVKKLPGKVISEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KQRLLANPSMKRAMLFPQPAQPGDAFHQILNGLARKLPHDKSIYLKTGEKALNWTAGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NNDPEGGYYARGARAAVWENFKNNPLFDISTDHPTTYYEDMQRAIFCLCPLGWAPWSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /evidence=not_experimental
/product="F17L21.24"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SASQLASVLINF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NSWSSVFVPPREGGFWVRLGVWNNKVLLFSRVCGHETLMYDLDKEKGSKWRVCDQIKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  translation="MFAAEIFMHRFLLSSPVRTRNPDEADWFYTPIYPTCDLTPTGLP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'db_xref="PID:g3935181"
                                                                                                                                                               oin(78862.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6306. .76387,76478. .7
.77542,77636. .77692)
                                                                                                            81309)
                                                                                                                                                               79059,79153. .79411,79507. .80678,80747. .80891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .76588,76756. .76848,77250. .77399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ESTs gb|N96209, gb|R87018,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .67868
```

CDS

```
GASSMICQLIHGDERSKISHLAWFGTGSKGSSSARLESSSIDGSISSMDLEDLKOKV
VLDSIGFSIWQIALAPISIEAESKEAKLIONGYLSEKSDEEESGVEDDSELDELLOK
VLDSIGFSIWQIALAPISIEAESKEAKLIONGYLSEKSDEEESGVEDDSELDELLOK
VEALDRHLAAACDDCCVRIYISESDKLTYYRSLPRYTGAALSYTWSADAQRIFSLSK
VEALDRHLAAACDDCCVRIYYISESDKLTYYRSLPRYTGAALSYTWSADAQRIFSGSS
DGLIRCWDANLCHEVYRITWCLGCIGNGSELCTWSLISIRGYVLYSGDSTGSVOFWDS
CHOTLLQAHSNHKGDVNALAASPSHNRVFSAGADGQVILYKLSGGTSRSQDFXSSAQ
KWDYIGCVRAHTHDIRALTYAVPSTELGGIGNGSELCTWSLISIRGYRYBAGFSYHKWAHL
GYPMLISAADDAKLYAYSVOFTTKFPFDDICAPAGRYPMGNWHNTVFNQTSLLLVQDS
CSLDILRIHISNDSSGRVSTKPLYRKSKDARKIICSALSNTGSLFAXSDQVRFSLSK
LKKNKIGKNFWSANRKRLPRFAHSMYFSCDCGRLIIAFHDRRIYIVDNGSMELLHS
FTPRQEGQEESFPHEPPITKLYTSSNODWLAAINCFGDIYVFNLETORQHWFISRLD
GASVAAAGFHFRONNVIVISTSSNOVFALDVBARELSKWSLLQTFCLDRSYOMEPGEV
VOLSFSFSCGSSSTIITSSRAKCLIFFGKPAEQDEDTDTPCNLSEKLEGKLASISMKL
GKNPWSAAGFHRONNVIVISTSSNOVFALDVBARELSKWSLLQTFCLDRSYOMEPGEV
VOLSFSFSCGSSSTIITSSRAKCLIFFGKPAEQDEDTDTPCNLSEKLEGKLASISMKL
GKNPAAGFHRONDVINISTSSNOVFALDVBARELSKWSLLQTFCLDRSYOMEPGEV
VOLSFSFSCSSSTIITGRVLFFAFFFFIILDVMIKILMPHSHHSQTTTLKTRAGGMGP
SSLAMKRRKSCGSSSTIISTQRVLGPIKTLSFQAFTHRLPFLDQVGYGFERGVS
TLVTLPLLQCSPSSKCKLEPEIKGKGVUDLNKTAEVICERBFTTQLGGPITTTTATT
SRVISPQDIIFPVCSKINVAYINDLTNSFTSOTSKKSPREVEEDVESDDLFSVITDSN
SRVRLVNSAYKEMMGQPECSWLDSMVRGKRIGGSWMINFCESKIPVMTENNGFSCWVR
LDMGRDGKEEYMHAFCDVTKLACDSKDYVFTWRFHTTTDRR
SRVRLVNSAYKEMMGQPECSWLDSKDVTFWRFHTTTDRR
JOIN (84492...8892,89156...99053)
**NOTTOP-***SIMITAT TO leafthin.nholestern) acvittmafferrag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="F17721.8"
//product="F17721.8"
//db_xref="PID:93935185"
//db_xref="PID:93935185"
//translation="MKKISSHYSVVIAILVVVTMTSMCQAVGSNVYPLILVPGNGGNQ
/translation="MKKISSHYSVVIAILVVTMTSMCQAVGSNVYPLILVPGNGGNQ
/translation="MKKISSHYSVVIAILVVTDAVLLSPTRCESDRMMLYYDP
/translation="MKKISSHYSVIAILVLDPRLADATSYMBHLVKALEKKCGYVNDQTIL
/EVRLDRYGCHTGSTRSLLYLDPRLADATSYMBHLVKALEKKCGYVNDQTIL
/GAPYDFRYGLAASGHPSRVASQFIQDIKQLVERTSSENEGFPVILLSHSLGGLYVHF
/LNRTTPSWRRKYIKHTVALAAPWGGTISQMKTFASGNTLGVPLVMPLLVRRHQRTSES
/NOWLLPSTKYIHDATKPLVVTPQVNYTAYEMDRFFADIGFSQGVVPYKTRVLPLTGEL
MTPGVPVTCIYGRGVDTPEVLMYGKGGFDKQPELKYGDGDTVNLASLAALKVDSLNT
/COMPLEMENt(join(90258..90471,90595..90775,90859..90958))
/note="similar to MYB transcription factor isolog"
complement(join(95514. .95715,95789. .97565,98312. .98357
                                                                                                                       VVVCCKWRSDSINTIYFVGENKHVQVDQRRGDLTLGQSCSFLMNYVPSFVQIQQGTLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="similar to lecithin:cholesterol acyltransferase
precursor (M26268)"
/codon_start=1
                                                                                                                                                                  /translation="MEWSLPVDLQEEILSRVPAKSLARWKSTPKQWKGPISIEFLHLL
RSTLKFPLLNLHLKSKSIYVTSFTAMVFCYAPPSTKDSRFGIHVQGKPSGFLADEQNK
                                                                                                                                                                                                                                                                               /evidence=not_experimental
/product="F17L21.29"
/db_xref="PID:g3935186"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (AC002335)"
                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(join(81833. .82924,84388. .84580,84662. .8492,85075. .85256,85340. .85917,86264. .86411,86652. .86814,86888. .87001,87154. .87217,87303. .87594,87699. .87842,87945. .88103))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /evidence=not_experimental
/product="p17L21.27"
/db_xxef="p10:93935184"
/translation="MFEYRCSSIDWKPSPVVALATSADGSQVAAAREDGSLELWLVSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ALDGAVEYSSNYGGVSTKGWKHLAIVLSAEKRLKDAESILDFTMEEAGDIEKIELLRL
KAVLOMAQEOPKKAMKTCSSLLGLIRAQEKSEQSESLLQKFETEAWQDLASVYGKLGS
WSDAETCLEKARSMCYYSPRGWNETGLCLEAKSLHEEALISFFLSLSIEPDHYPSIYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WNLDPORLAVTOKSLALVILYGSVEAGPKDNIEEAIVILMLLVKKMVVGDIOMDPELM
DHLTYALSMTGOFEVLANYLEQTLPGVYTRGERWYLLSICYSAAGIDKAAINILKMAL
GPSESROIPHIPLLLEGAKLCSKDPKHSRDGINFAHRLLDLGNSQSEHLLSQAHKFLG
VCYGNAARSSKLDSERVFLQKKSLFSLNEAAKRGKADPELDVIFNLSVENAVQRNVQA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IAEVMMKSGDESLPTAKSFLMNALRLDPRNHDAWMKLGHVAKKQGLSQQAAEFYQAAY
ELELSAFVQSFI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LEDIQVDEAESTLKEALSLNYEEARALLGRLEYQRGNFDAALQVFKGIDIKVLTPRII
KAIVEKTLPCKPRSKAVIVPPTTMSMHSVSLLLEAILLKARSLEELGSYKEAAEECKI
ILDVVENALPSGMPDGISGFAKLQDIFQKALELLPLLMKKAGNHHETIASYRRALSRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       translation="MLCACSGEQFRFEDQPGSPESLATRDFSASGLSSRNGGGDWDSK/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="F17L21.26"
/db_xref="PID:g3935183"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .84922,
```

Sgo

CDS

CDS

```
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 13
AC004557/c
                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SDOO
                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 136;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11874 ATTTAAATTGTAAAGCTTTACAAGCATCTGTGAAA 11840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12114 ACAAACCAGAAAATTTACTATGGGTATAAGGTTCACCACTAGAACTTGAATGATTTTAAT 12055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12054 TIGAGCIGTATAGGICITTATATATATAAAAAAAAAAAATAGACCITTIGCAATTGTATCA 11995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         722 ACCAAATGTGATGCATGGTGGATCCAGAAAACAAAAGTAGGATACTTACAAT----CCA 777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     662 ACACAGCCAACATTTTAGGAACTTTCTAGATTATAGCATAAGGACATGTAATTTTTGAAG 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAACATCCATATGACTGAACACTTGTATGTGTTTGTTAAATATTCGAATGCATGTAGATT 837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGGAGACAGGTCAACCAAAGAGGGAGCTAGGCAA 932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTTAAATGTGTGTGTATAGTAACACTGAAGAACTAAAAATGCAATTTAGGTAATCTTAC 897
                                                                                                                                                                                                                                                                                                                                                                                                       sequence.
AC004557
                                                                                                                                                                                                                                                                                                                                                                                                                                                AC004557
Genomic s
Submitted (14-APR-1998) Arabidopsis thaliana Genome Center.
                                                                                                                                                 Shinn, P., Buehler, E., Conway, A., Conway, A., Vysotskaia, V., Yu, G.,
                                                                                                                                                                                                                                               Eukaryota; Viridiplantae; Charophyta/Embryophyta group;
Embryophyta; Tracheophyta; euphyllophytes; Spermatophyta;
Magnollophyta; eudicotyledons; Rosidae; Capparales; Brassicaceae;
                                                                                                                                                                                                                                                                                                                  thale cress.
Arabidopsis thaliana
                                                                    Unpublished (1998)
2 (bases 1 to 99689)
                                                                                                      Genomic sequence for Arabidopsis thaliana BAC F17L21
                                Direct Submission
                                                   Ecker, J.R.
                                                                                                                                    Ecker, J.R.
                                                                                                                                                                                                                                         Arabidopsis.
                                                                                                                                                                                                                 (bases 1 to 99689)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /evidence=not_experimental
/product="F17121.30"
/db_xref="P17121.30"
/db_xref="P10:g3955187"
/translation="mOLASYRGOGKIADFGFKKPRWYEGKLLKLNGKCRPYITIGIEN
RNRPYSCLFEIKKMEGGSVNESHSNADQMFDTTIEELCKNLCELQSSNQSPSRQSFGS
YGDESKIDSDLQHLALGEMRDIDILEDDEGDEDEVAKPEEFDVKSNSSNLDLEVMPRDM
EKQTGKKNVTKSNVGVGGMRKKKVGGTKLQNGREEPSSNVELARFLLNQARNILYSG
DSTHRALEITHRAAKLFEASABNGKPCLEWINCLHVTAAVHCKLKEVNEAI PVLQRSV
EIPVVEEGEEHALAKFAGLMQLGDTYAMVGQLESSISCYTEGLMIQKKVLGENDPRVG
ETCRYLAEALVQALRFDEAQQVCETALSIHRESGLPGSIAEAADRRLMGLICTKKDH
ENALEHLVLASMAMANGGESEVAFVDTSIGDSYLSLSRFDEAICAYQKSLTALKTAK
GENHPAVGSVYIRLADLYNRTGKVREAKSYCEMALRIYESHNLEISPEEIASGLTDIS
VICESNNEVEQAITLLQKALKIYADSPCQKIMIAGIEAQWGLLYYMMGKYMESYNTFK
SAISKLRATGKKQSTFFGIALNQMGLACIQLDAIEEAVELFEEAKCILDGECGFYHPE
TLGLYSNLAGAYDAIGRLDDAIKLLGHVYGVREEKLGTANPVTEDEKRRLAQLLKEAG
NVTGRRAKSLKTLIDSDLTSSSALR"
18594 c 18732 g 31309 t
                                                                                                                                                                                                                                                                                                                                                                                                                                              sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="similar to kinesin light chain (Z25664);
to EST gb|R90451"
                                                                                                                                                                                                                                                                                                                                                                                                                                            99689 bp
                                                                                         (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA PLN 01-DEC-1998 Arabidopsis thaliana BAC F17L21, complete
                                                                                                                                         Dewar,K., Feng,J., Kim,C., Li,Y., Sun,H., Kurtz,D., Oji,O., Shen,Y.K., Toriumi,M., Davis,R.W., Federspiel,N.A., Theologis,A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 41; DB 9; Length 99689; Pred. No. 3.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches 135; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       similar
                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
```

```
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sdo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (01-DEC-1998) Arabidopsis thaliana Genome Center. Department of Biology, University of Pennsylvania, 38th St. Hamilton Walk, Philadelphia, Pennsylvania 19104-6018, USA On Jun 16, 1998 this sequence version replaced g1:3097814.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (16-JUN-1998) Arabidopsis thaliana Genome Center, Department of Biology, University of Pennsylvania, 38th Str Hamilton Walk, Philadelphia, Pennsylvania 19104-6018, USA (_bases 1 to 99689)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Department of Biology, University of Pennsylvania, 38th Street and Hamilton Walk, Philadelphia, Pennsylvania 19104-6018, USA (bases 1 to 99689)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ecker, J.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /evidence-not_experimental / product="F17L21.2" / product="F17L21.2" / product="F17L21.2" / product="F1D:2935159" / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / first / fi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="f17121.1"
/db_xref="p10:g3955158"
/db_xref="p10:g3955158"
/tanslation="msylengrepaspp1sLspssssstspssospstppdlkgrviacln
/translation="msylengrepaspp1sLspsssstspssospstppdlkgrviacln
/translation="msylengrepaspp1sLspsspstppdlkgrviacln
KLADRDTLALASAELDSIARNLTHDSFSPLACAVATADMSAHVTRQPFSASVAKPLIET
KHADRSTPHLAKRVSTVLRTLRDDDSSSVRSACAVATADMSAHVTRQPFSASVAKPLIET
LIQEGISHQJGAALCLAASVDAATDPESEQLARSLPKIGKLLKSDGFKAKAALLSAV
GSIITAGGAGTKPVLDMLVPVLIEFLSSEDMAARKSAAEALGKVATAEDLASQYKKTC
                                                                                                                                                        /db_xref="pid:g3935161"
/translation="mygggskhygegskpratkddayaylrayrakfhndskkyddfy
/translation="mygggskhygegskpratkddayaylrayrakfhndskkyddfy
avmtnekarridrdgcikevedllkghrdlisgfnaflpkcleiknyyfgagedlevy
ytakrkilarsytkrsssssssfrdepakyrgflsllrdrrakridkatffyglvel
ikdhldlllgfnallparfqipitpagfqnvvgrsvppettiedatsylnsykrafhd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QEEVVDLLYYHEDLIDKFFRLFNMRK"
join(12453. 12613,12749. 12879,13398. 13479,13874.
14016. 14285,14382. 14499,14602. 14703,14781. 1488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="PID:g3935160"
/translation="Myerrvoyeptisdahsyitavkeafhdeptkyeefiklmndir
DHGYUKASGIAKLTELIKGHPRLLRGLSFFFFOVNRDIHHEAKRTIIIKDKATIPPEA
AYRGAKSTYTKIKQIEPDWENFMNMLKTRFRSLDTHVVESFIKIMIMYDEGKKSEKEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTALESRRFDKVKSVRETMNRALNLWKEVSTDDEASLSPSRSSTDDGNIGCFSSVTRS
STIDVGLKSARPKKVTPIMKRSPSLPVNRSYAATRQKENLPKRNQGNMTMLVEEASSV
DNKGPHFTPVKKSSEETEEKANSGGPDIIKHTISEKSREDSKVSSFGGLRSGSRVAPC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement(join(71. .672,759. .858,941.
/note="5' end of T7N9.22 (gi|2213602);
that overlaps Sp6 end of T7N9; similar
AKFQGDGSHVADSVLQILRMYSEGNKSKSEAFQEVVPLVQDHEDLVMELIKIIFSDP"
join(15962. .16104,16188. .16481,16578. .16695,16782. .168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SDDGDSVKNCKDDVEESKKDSEELSLIREQLALIENQQSSLLDLLQVYTWSLISIVSL
                                                                                                     EPAKYEELLKLLNDIEARRVDAASFIASVEELMKDHQTLLNGFSVFLSAEMKFIRKLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /evidence=not_experimental
/product="F17L21.3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (gi|2213603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           join(7691. .7830,7965. .8093,9131. .9329)
/note="hypothetical protein similar to T7N9.23
                                                                                                                                                                                                                                                                                                                                                                                                                           /evidence=not_experimental
/product="F17L21.4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /chromosome="1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Arabidopsis thaliana"
/db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'note="hypothetical protein similar to T7N9.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .99689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    858,941. .1801))
13602); 3' partial gene
similar to EST gb|N96069"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 38th Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Street and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .14852)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .13939
```

```
DSGATHLITIDLNILALHQPYNGGEEVI ADGSTLPITHTGSSTLSTOSRELAUNIL
YVPNILHKNILISVYKLCNANKYSVEFPRAHFOYKDLSTGARLIGGRTKDELYEMPVSN
TPISLFASPTPKTTLPSWHSRLGHPSPPVLKSLVSGFSLPVSNSSGKHFPCSHCLINK
SHKLPFYSNTIISTTPLEYVYSDVMTSPVTSVDNFKYYLILVDHYTRYTMLYPLKOKS
GVRETEVAFKALVENRFOTKLTATLYSDNGGEFTALROFLLTHGLSHLTSLPHTPEHNG
IAERKHHLLETGLTILITQASIPTSYMTYAFGTAVYLINRLPSSYLNNESPYSKLFKT
SPNILKLRVFGCSCFFWLRPYNNKLERRSQPCVFLGYSLTGSAYLCLDRSGFRVTTS
SPNILKLRVFGCSCFFWLRPYNNKLERRSQPCVFLGYSLTGSAYLCLDRSGFRVTS
SRHVLGTLOSSSSTNNDVVVSKDNTTQVDNRNNFIGFTSSSSAGSQNNSNPSSS
RHVQFVEDQFFSISDTHSVSNSSPEEASPSCHQPPSRTPIQSSSPPLVQAPSSLPPL
SSDSHRFRNAETSSSSSTNNDVVVSKDNTTQVDNRNNFIGFTSSSSAGSQNNSNPSSS
IQTQNEBPNSSSFTSSSSSTNNDVVVSKDTTQVDNRNAFEFFSPVKSLTIRLVLQLA
VSRSMTIKQLDVNNAFLGGTLTDEVYYTQPFGFIDPDRPHTVCRLKKALYGLKQAFRA
VSRSMTIKQLDVNNAFLGGTLTDEVYYTQPFGFIDDDRPHHVCRLKKALYGLKQAFRA
WYQDELRNFVCSLGFTNSLADTSVFVYINDIQTYCLVYVDIITGSSDALVMAFTA
ISBREST INDEDLYTGLITTEFTGCTIL HUGUVYNDIITGNEWILLDSCHUTGNAFTA
                                                                                                                                                                  /@v1Gence______/product_="F17L21.8"
/product_="F17L21.8"
/db_xref="PID:9393165"
/db_xref="PID:93935165"
/translation="MMRRQRDEQOSRVEYDLSSLVLNLLRSPPMPISLPDHFPDPPAR
/translation="MMRRQRDEQOSRVEYDLSSLVLNLCGSVTEFIGFLLMPWVLALI
IRPPESSHRESSSSPSLAHISPSGFASLLLGISVALMLCGSVTEFIGFLLMPWVLALI
LVFYVAGIVSAISMVGRSILCYVLTPPSPSPSGKEISEWKLL"
1~1n(27209. .27349,27618. .28079)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  join(25673. .26084,26445. .26461)
/note="unknown; similar to ESTs gb|T42386, gb|H36247,
gb|N38423, gb|T21830, and gb|AA585725"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /evidence=not_experimental
/product="p17L21.6"
/product="p17L21.6"
/db_xref="p1D:g3935163"
/translation="%EEVYHDEPEKFNHILHLIRDYENHRDDRARITACMGELMRDHL
NLLVRFFDFFPAEASECLAQLQTIAATSVSPDSTIDDAVSYINTVKEAFHDEPAKYYE
FFQLFYDIRYRYVLLCPSSILFALNFKSQSIQHCEVILFVIYYSLCRLIDVAGGITRV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VLRYLAGTATHGILLRSNSPLSLHAFSDADWAGDNDDFVSTNAYIVYLGSTPIAWSSK
KQKGVARSSTEAEYRAVANTTSEIRWYCSLLTELGITLPKMPVIYCDNVGATYLSANP
VEHSRUKHLALDYHFIRDNVSAGALRVSHISTHDQLADALTKPLPRQHFLQFSSKIGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RFDQLALLGKPMESEEQMEVIVEGLSDDYKQVIDQIQGREVPPSLTEIHEKLLNHEVK
LQAAASSLPISANAASYRPPANNKHNNSNNYRGQNRNNNNRGANSYQQPRNDQPSSRG
YQGKCQICGVFGHSARRCSQLQMSGAYSTPSPSQYPNATVPWQPRANMAAMSYNPWLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KRSLNINIAATLFF1IFHYFSFSSMASETVITSDSTSLLNVNMTNVTKLTSSNFLMWR
RQVQALLNGYDLTGYIDGSIVVPPATITANGAVTVNPAFKHWQRQDQLIYSALLGAIS
ISVQPILSRTTTSAEIWTKLMDTYAKPSWSHIQQLRQQIKQWKKDTKSIDEFFQGLVM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EELLKAHKNILVRIMAFIPPBAORIIHLKIEORAASDINKRKRVASFIGKLKERFOGD DRHVYESFLEILTMYOEGNKSVNDLYGEVGFLWIDYTFS"
join(19430. .19507,19610. .19831,20016. .24392)
/note-"putative polyprotein (af039376)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LSRRESLKDPTDLYYFLGIEATRTSQGLHLMQHKYYYDLLSRMKMLDAKPVSTPMATH
PKLSLYSGIALDEPGEYRTYIGSLQYLAFTRPDIAYAVNRLSQFMHRPTDIHWQAAKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence=not_experimental
/product="F17L21.7"
/db_xref="PID:93935164"
/translation="MFINIVNRVIQVNCWSHTWHEASCLQVFDTKTQTCDPKPIPCSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EVRALIQGHEDLLMELSEIFSDP"
join(17912. .17988,18081.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="PID:g3935162"
/trans1at1on="MVGKSKSPEFNFEDGMAYFDAVKVALQDTEPEKYQEFVRIFIDY
TANRFGFETLSASLQELLRDHANLCHGSNVLLPFRLQTAIPPEASAEFHINKVVGRSV
                                                                                     /evidence=not_experimental
/product="F17L21.9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TFGGFDYKTLCLDGKFHVGPVPVDKTRIRLADYGGKRAVLWPNNIHSLRKMIWCAESF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="hypothetical protein"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PPAVAVPTMDDATSYLNAVKEAFHDEPAKYMEITKLLTDLKARRINAASVIARMEELL
KDHLNLLLGFCVFLSPTRRFITKLKARFLGDGSQVVDSVLQILRMHSEGNKSKDEASQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16966. .17034)
/note="hypothetical protein"
'db_xref="PID:g3935166"
'translation="MESSEDVENLSRAIEKLLHEKRKREASGDAFIEDADDQLFLSSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
```

Sd

```
Sgo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORPYHEDYDLEALEPSPYGEEZAPVIRADITYSHUMLSKEEDERNYLAARSSG
KGYLTAPEPLIKINKLGYILTRAYYKRDLPSNATPKERIEATNGYLGGVFDIESLYEN
LLQQLASKOTILVNYYDINNSQPISMYGTNYSADGLERYSPLIFGDPLRKHEMRCRY
LQLAHTYYCNFFLEARIQYLTFCCELLPLCRFKOKPEWPFVLSWYTSFGGILYALLYAH
IIHATYSRHHKYEEDCDEMKQLKKAEAADVAKSQFLATVSHEIRTPMMGYLGWLHML
MDTELDVTQQDYRTAQASGKALVSLINEVLDQAKIESGEKLELEEVREDLRGLIDDYL
SLFSSKSQOKGYLLAVISDRAVPDMLIGDDGRERQILINMNSSIFTEKGHIFYTVH
LVDELFESIOGETASSESTISGLPVADRORSWENFKAFSSNGHRSFEPSPDINLIV
SYEDTGYGIPVEAQSRIFTPFMGYGPSLSRTHGGTGISISKCLYGLMKGEIGFSST
PKVGSTFTFTAVESNGKQPAERKNDNNOPIESEFERKKAVVDHRPARAKVSWYHFQR
LGIRVEVPRYEDGALHYLKIGTTTVNMILLEQEIWNREADDFIKKLGKOPLETSSFKLI
LRNLLLGKRILLVDDNYNLFWAAGALKKYGADVYCAESGIKAISLLKPPHEEDACFM
DIQMPEMDGFEATRRIBDMEEBMNKRIKNGEALIVENGNKTSWHLPVLAMTADVIQAT
HEECLKCGMDGYRIIRGDGAGRRTAKETQKLVSPMHLEVVEKQIDDCKKSVYRKAGYT
DDDF"
                                                                                                                                                                                                                                                                                   /db_xref="pii:g3935170"
/translation="meeelamlroligoloeilhngsppppssssslsssspsflvlh
HPQYQNGWCLFCIEDTSADDCCDIVMAGGKRPGIFKMLETVKPPVKRTRKERTQGKSC
TEVDEISGNMDQEIWOEFDPVSRLFMATFGCFAVCTKWNALIDSDSFSRCF
TELPOTIPWFYITHENVNSGQYVDBSLKKWHHPIIPALFKKSIVLPMASAGGLVCFL
DIGHRNFYVSNPLTKSFRELPARSFKVWSRVAYGMTLNONSTSHGYKYLWVGCEGEYE
VJSLSJNWWTKRGTIPSNIKLPYLLNFKSQPVAIHSTLYFMLTDPEGILSYDMVSGKW
KQFIIPGPDLSDHTLAACGERLMLVGLITKNAATCVCIWELQKMTLLWKEVDRMPNI
/evidence=not_experimental
/product="F17L21.14"
/db_xref="PID:g3935171"
                                                                                                                                                                 complement(join(42083.../note="unknown; similar
                                                                                                                                                                                                                                 WCLEFYGKHIRMNCLGNKGCLILLSLRSROMNRLITYNAVTREWTKVPGCTVPRGRKRLWIACGTAFHPSPTARA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="MTTSKRIADRKIEKFDKNILKRGFVPETTTKKGKDYPVGPILLG FFVFVVIGSSLFQIIRTATSGGMA" join (39626. 39777,40491. 41742) /note="similar to fim protein; similar to ESTs gb|T42445,
                                                                                                                                        gb|AA586199"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /evidence=not_experimental
/product="F17L21.13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence=not_experimental
/product="F17L21.12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GDLEKTKMTTIKKKNKMWFWNKISSSGLKIPSFSYQFLGSVKENKAWWRKLVVVWVVF
WVLVSIMTFWYESSQAMEKRKETLASMCDERARMLQDQFNVSMNHVQAMSILISTFHH
GKIPSAIDQRTFSEYTDRTSFERPLTSGVAYAMIVLHSBREEEERQQGMTIRKMYSLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           join(36949. .36951,37408. .3/note="unknown; similar to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /translation="MDPDAVAKAFVEHYYSTFDANRPGIVSLYQEGSMLTFEGOKIQG SQNIVAKLTGLPFQCKHNITTVDCQPSGPAGGMLVFVSGNLQLAGEQHALKFSQMFH LISNGGNYVFNDIFRLNYA"

join(31665...32171,32453...32734,32937...33106,33195...3369 33784...3835,33950...34179,34268...34366,34453...35558,35648...35827,35899...35986,36081...36149)

/note="similar to sensory protein bara (sp[P26607); similar to histidine kinase A (gi[I136289); similar to ESTS gb[AA712891] and gb[AA042438"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="PID:g3935168"
/translation="MSLFHVLGFGVKIGHLFWMLCCWFVSWFVDNGIEDKSGLLVGSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 db_xref="PID:g3935169"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ISQLESPNPKGKEDVITGEEEEKEESADSSPSKGKSEGQRQLEESIEEIAKDIKKVK KQNKITHVLLSATIILITLVWQLSEYSMIFMLKDRISHPVRSIGGMLNGMFKGKLRPIK NQLAGTSNSNDQNNHGNGSHTGPDQLQVPELLREEFGPDEE**

complement(join(28500. .28571,29379. .29675))

/note="similar to nuclear transport factor 2; similar to ESTS gb|T21347, gb|N96312, and emb|F20149**
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="F17L21.11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /evidence=not_experimental
/product="F17L21.10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'db_xref="PID:g3935167"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb|AA650733, and emb|Z17748"
                                                                                                                                               .42239,42509. .42669,43186. .43188))
ur to ESTs gb|T20610 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .37564,37737. .37783)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb|T20610"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .33690,
                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SdS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
```

CDS

Sgo

CDS

```
/product="F17121.19"
/db_xref="F10:g3935176"
/db_xref="F10:g3935176"
/db_xref="F10:g3935176"
/translation="MEFSTADFERLIMFEHARKNSEAQYKNDPLDSENILKWGGALLE
LSQFQPIPEAKLMLNDAISKLEEALTINPEHARKNSEAQYKNDPLDSENILKWGGALLE
EDKATTYFQRAENEDPENDYTKKILDSKLEAPELHWQFMNQEMQQQILGGGGGGGGG
MASSNQSKKKKNYTETYDYCGWILLACGTYAPWGMAKSLGPPPAR"
MASSNQSKKKKNYTETYDYCGWILLACGTYAPWGMAKSLGPPPAR"
MASSNQSKKKKNYTETYDYCGWILLACGTYAPWGMAKSLGPPPAR"
MASSNQSKKKKNYTETYDYCGWILLACGTYAPWGMAKSLGPPPAR"
JOIn (59115, ...59117,59214, ...59250,59369, ...59409,59889, ...6011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OTLSSKGKYVSVNIGPIOVVSSEQVQAVYNAMRRDERMKYFL"
Complement()oin(57354. .57485,57633. .57761
58075. .58244,58331. .58409,58699. .58797),
/note="similar to TOM20 (x92491); similar to TOM20 
                                                                                                                                                                                                        /note="similar to 60S ribosomal protein L17-2 (sp|p35267); similar to ESTs gb|L33542 and gb|AA660016"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="MKEMMERLLILPESIGCSTOSCVAVATTHOOKKPNQLIKSTFLL TFLLVESDAKGSFKDYTKMENNNNGANISDGIYRIIRSFKSFSHFFIRYEEETKERE AEMEIGFPTDVKHLSHIGVDGTMTTFDNTSSSFPFSGFHLTGTVV" complement(join(55014. .55070,55246. .55329,55703. .55816,56001. .56104,56456. .56705))
/evidence=not_experimental/product="F17L21.20"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="MACKTILRSVFVSESRRTSGARRCFFLPPSPASVPVHGLFPAPK
SLCFWGFASVPERATELNCSHNDQSDQGPPQEAVLKAISEVSKTDGRVGKTTNMIIGG
TVADDSAKDWLELDQKVNTYPTERGFTAIGTGGNDFVHAMVVAVESVIDRQIPEDCVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(join(52788. .52954,53423. .53556,53832. .53974))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /evidence=not_experimental
/product="F17L21.18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /evidence=not_experimental
/product="F17L21.16"
/product="F17L21.16"
/db_xref="PID:g3935173"
/db_xref="PID:g3935173"
/translation="MDCWTSFPWDWENLIMSNOSKTENEKKQOSTEWEFEKGEGIE
/translation="MDCWTSFWHTAVSKSSQSTSINSSSPEDKRCNLASQSSPEDSSSN
/Translation="MDCWTSFWHTAVSKSSQSTSINSSSPEDKRCNLASQSSPEDSSSN
/Translation="MDCWTSFWHTAVSKSSQSTSINSSSPEDKRCNLASQSSPEDSSSN
/Translation="MDCWTSFWHTAVSKSSQSTSINSSSPEDKRCNLASQSSPEDSSSN
/Translation="MDCWTSFWHTAVSKSSQSTSINSSSPEDKRCNLASQSSPEDSSSN
/Translation="MDCWTSFWHTAVSKSSQSTSINSSSPEDKRCNLASQSSPEDSSSN
/Translation="MDCWTSFWHTAVSKSSQSTSINSSSPEDKRCNLASQSSPEDSSSN
/Translation="MDCWTSFWHTAVSKSSQSTSINSSSPEDKRCNLASQSSPEDSSSN
/Translation="MDCWTSFWHTAVSKSSQSTSINSSSPEDKRCNLASQSSPEDSSSN
/Translation="MDCWTSFWHTAVSKSSQSTSINSSSPEDKRCNLASQSSPEDKRCNLASQSSPEDSSSN
/Translation="MDCWTSFWHTAVSKSSQSTSINSSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSPEDKRCNLASQSSN
/TRANSladdsparksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkrasquarksperkra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RKKTKSCGQSMQVPRCQIDGCELDLSSSKDYHRKHRVCETHSKCPKVVVSGLERRFCQ
QCSRFHAVSEFDEKKRSCRKRLSHHNARRKKPQGVFPLNSERVFDRRQHTSMLWNGLS
LNTRSEEKYTWGTTYETKPTQMESGFTLSFQRGNGSEDQLFTGSTLSFSAFQTSGGFS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50218. .50882))
/note-"similar to squamosa-promoter binding protein (gil2673911)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'db_xref="PID:g3935175"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product="F17L21.17"
/db_xref="PID:g3935174"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGKSNIQLPDKGVGECSGGLHESHDFYSALSLLSTTSDSQGIKHTPVAEPPPIFGTFP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(join(49339. .49493,49603. .49851,49967. .50088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DFLQVKPSTALEVPIASAESDLCLKLGKRTYSEEFWGRNNNDLSAVSMNLLTPSVVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            join(46024. .46685,46846. .46967,47100. .47351,47.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MTTSKRLADRKIEKFDKNILKRGFVPETTTKKGKDYPVGPILLGFVFVVIGSCESLGLQLAEAWHKPKHSQARRSSFQNVESSSVSFLFLSLYCRMCQLSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product-"F17L21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /evidence-not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (AC002561)
                                                                                                                                                                                                                                                                                                                                                                  .60464,60563
                                                                                                                                                                                                                                                                                                                                                                          .60610)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .57761,57936. .57983,
                                                                                                                                                                                                                                                                                                                                                                                                                                .59409,59889. .60119,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .47351,47455. .47600)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               to ESTs
```

```
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VAESNDSSSITGISRSTYVNNPSQQDNFQRKSESEVYGRPPHAEDQSFLDFSAQDEE
IVPPCRARVSGYASSVKSSTSMHDALMEFSGHSDIPVEVTGATTANTRNQNENKLHPFGVL
WESLEGGSTPVNPLPNRSSGAMGEPSCSIENNPINSRRNNSQIDPNISLDALSGNRMSQ
FEHESNFFNHGDQLFSNOHHQOHFQNRDMLSHLHIGDQDLEHLITLQLQQOOKIQMQQ
QQKIQLQQQQKIQLQQHQLEQEHQLHQKLLQEQQOSHARQLHFQQILQGQTPDTRFGQ
SHDFPRSNSVDQMLLEQQMCSCHGQCQSCHSQNFAPYIEDHAGNFGRFFHEGHQREL
LEQLFSTQMOSQYGQKOSQYGQMQSQHGQLQSEPIRSLEYQLLQQEQLMQLANGVRHN
TLLEEQRHIDPLWPSCHSDQLLMTHPGHIRSHSSAGFRFLDFHQQQQRPHFEDQFSQL
ERNRSYQQQLRLELHGLFFERSASGLNLDAVNGLGLSQGLELRDATAHMQSSGRLG
NSTPGTSHQNPRIPLELLEHGLPFERSASGLNLDAVNGLGLSQGLELRDATAHMQSSGRLG
NSTPGTSHQNPRIPLELLEHGLFFERSASGLNLDAVNGLGLSQGRAMSSYDAQDRWFS
GLTPGIQTLGGLSDHGMQNVSSAFGDRSFSDEQVNRVPGYGNNMGSLHHRSSLLSGI
IDARRSTQNETQAFSMMFGMNNDANDINTWNNVPFKNEGMRMSSYDAQDRMGKQAVL
IDARRSTQNETQAFSMMFGMNNDANDINTWNNVPFKNEGMRMSSYDAQDRMGKQAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /evidence=not_experimental
/product="F17L21.22"
/product="F17L21.22"
/db_xref="pID: 9395179"
/translation="MVVESSSSPIIPGLTDDVAELCVSKIPRSSFQITSQVCRRWRSF
/translation="MVVESSSSPIIPGLTDDVAELCVDASGRKLGQIPPVGGPLKRGF
/translation="MVVESSSSSPIIPGLTDDVAELCVDASGRKLGQIPPVGGPLKRGF
/translation="MVVESSSSSPIIPGLTDDVAELCVDASGRKLGQIPPVGGPLKRGF
/translation="MVVESSSSSIIIFGLTDDVAELCVDASGRKGQIPVGPDANNSWRKLAGQIPPVGGPLKRGF
GVAVLDGGKIVFFGGYTEVEGSGINSTTVSASADVYEFDPANNSWRKTAGAFAFSSKLY
AFGNGSRFIDIYGTGTWEELNSEQSVSVYSYTVVRNKVYFMDRNMFGRLGVEDPEE
AVGNGSRFIDIYDFXTQTWEELNSEQSVSVYSYTVVRNKVYFMDRNMFGRLGVEDPEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="F17121.21"
//db_xref="F17121.21"
//db_xref="F1713935178"
//db_xref="F17121.21"
//db_xref="F1713935178"
//db_xref="F17121.21"
//db_xref="F17121.21"
//db_xref="F171215"
//db_xref
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ISSEVYTSSGEESLGGNSLLKCRIPESGETKUDGALLGFMNGDNGSMKNNDSGLLGSH
NGGLGAASSVPRLNSVASESVGGGGAGYQLSHGSPEAVRSVFLSSDISGEVVGSF
EQAYTGKLQOPDTEVDHSEGAMPPEEFLFLYLDPOGVLOGFFICSDIISMFEQGFFGT
DLQVRLASAPEGTPFQDLGRVMSYIKAESVHAHISDQKSELEETSLKANSEAGGSVAH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DDKEKEARCEKVDINKDKEEPQSESQSVVSNVRATSERDSDTRDKWRPRHRMESQSGG
PSSYRAAPGFGLDRGRAEGPNLGFTVGRGRASTIGRGSSTSLIGAGSALSPVFRYPRG
KLLDMYRKQKPDSSLGRILTEMDEVASITQVALIEPLAFIAPDAEEEANLNGIWKGRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KMDVRSPTPVPMGNPSDPNPKDAWRLDAPEDKKDWKKIVHENETSRRWREEERETGLL
GARKVDRRKTERRIDSVSSRETGDIKNAAASDRWNDVNSRAAVHEPRRDNKWSSRWGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement(join(64930...65189,65274...65411,65541...67868,68016...68726,68873...68971,69070...69160,69275...70105,70275...70345,70747...70813))
/note="unknown; similar to ESTs gb|N96209, gb|R87018,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RWKRDSHSSLKRNKKRARIQVKCAKILEVD"
join(62993. .63429,63730. .63953,64026. .64405)
/note="similar to MIPP proteins (gi|2191178, sp|P28575)"
                                                                                                                                                                                                                                                                                                                                GGKKKGKKGRQIDPALLGFKVTSNRILMGEIHRADDF"
complement(join(73150. .73663,73910. .74151,74405.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DILLLQTDTVTTWLEKIEGRIVPSHGQNSVLLKRPPSSHSSSSHEGLLERMSDTASRA
AASSYSGIEGGVRRESGAAGNKGSTSEAASFSEMLKKSNSMKKVAAESTDATEGSKGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb|H76168, and gb|AA395332"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NSWSSVFVPPREGGFWVRLGVWNNKVLLFSRVCGHETLMYDLDKEKGSKWRVCDQIKP
SASQLASVLINF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="MVKYSQEPDNITKSCKARGADLRVHFKNTRETAHAIRKLPLNKA
KRYLEDVIAHKQAIPETRECREVGRTAQAKKNHHSNGQCRWPAKSQFVLDLLKVARESN
AEVKGLDVDALFISHIQVNQAAKQRRRTYRAHGRINRMSSFLEDCFYNVCFFIHIVLT
LDLILSYAAYMSNPCHIELILSEKEEPVKKEPETQLAAKSKKCASS"
join(61111. 61402,61486. 61688,61772. 61879,61963. 62628)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DSLIQEELPVGTPGQQSSFNISGMLSFRVIASSKIFCYFSNFMVWKVDFYFVIMKAYP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="PID:g3935180"
/translation="MAEGKFDLPDDLIFSKSSDQLKELASDNSIPLSPQWLYTKSSEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /evidence=not_experimental
/product="F17L21.23"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="hypothetical protein'
/evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           codon_start=1
                                                                                                                                                                                               to multiple
); similar t
                                                                                                                                                                                                     ն
                                                                                                                                                                                                     exostoses type II protein
to ESTs dbj|D39982, gb|L37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
```

```
VEALDRHLAAACDDGCVRIYYISESDKLTYYRSLPRVTGRALSVTWSADAQRIFSGSS
GCLIRCWDANLCHEVVRITVCLGGLANGSELCIWSLLSLRYSVLVSGDSTGSVQFWDS
QHGTLIQAHSNHKGDVNALAASPSHNRVFSAGADQVLIYKLGGTSRSQDFKPSSAQ
KWDYIGCVRAHTHDIRALTVAVPISWEGSIPDRNAKVTSPKQRRKEPAGFSYHKWAHL
GVPMLISAGDDAKLYAYSVQETTKFPHDICPAPQRVPMQMYHNTVFNQTSLLLVQDS
CSLDILRIHISNDSSGRVSTKPLVRVKSKDARKIICSAISNTGSLFAYSDQVRPSLFE
LKKNKLGKNPWSANKKELPNLPFAHSMVFSCDCSRLIIAGHDRRIYITURVGSNELLHS
                                                                                                                                                                                                                                                                    FTPRQEGQEGESPPHEPPITKLYTSSNDDWLAAINCFGDIYVFNLETQRQHWFISRLD
GASVAAAGFHPRDNNVIVISTSSNQVFALDVEARELSKWSLLQTFCLPKSYQNFPGEV
VGLSFSPSPCSSSVIIYSSRAKCLIEFGKPAEQDEDTDTPCNLSEKLEGKLASISMKL
GNGAQKRRLEEYQKESKSNKRKKFEMFFFIILDVMIKILNPHSHHSQTTTLKTAEIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WNLDPQRLAVTQKSLALVLLYGSVEACPKDNIEEAIVLLMLLVKKMVVGDIQWDPELM
DHLTYALSMTGQFEVLANYLEQTLFGYVTRGERWYLSCVEAGAIDRAAINLLKMAL
GPSESRQIPHIPLLLFGAKLCSKDPKHSRDGINFAHRLLDLGNSQSEHLLSQAHKFG
VCYGNAARSSKLDSERWFLQKKSLFSLNEBAKRGKADPELDVIENLSVENBAVQRNVDA
ALDGAVEYSSNVGGVSTKGWKHLAIVLSAEKRLKDAESILDFTMEEAGDIEKIELLRL
                                                                                                                                         SKYRPIAPKPGTPRVNDDDPSSSMSHKISQSPYLRNLWPQLQARPTRTRKRGRGGMGP
SSLAMKRPKSSCGSSSTSTISTQRVLGPIKTLSFQAFTHHRLPNLPQVGYGFENGVSS
TLVTLPLLQCSPPSSKCMEPEIKGKGVIDLNKTAEVIQERDFLTQLQGPITTTTTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(join(81833...82924,84388...84580,84662...8492
85075...85256,85340...85917,86264...86411,86652...86814,
86888...87001,87154...87217,87303...87594,87699...87842,
87945...88103))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="pid:g3935183"
/translation="MLCACSGEOFRFEDOPGSPESLATRDFSASGLSSRNGGGDWDSK/translation="MLCACSGEOFRFEDOPGSPESLATRDFSASGLSSRNGGGDWDSK/LEDIQVDEAESTLKEALSLNYEEARALLGRLEYQRGNFDAALQVFKGIDIKVLTPRIIKALDIVEKTLPCKPRSKAVIVPPTTMSMHSVSLLLEAILLKARSLEELGSYKEAAEECKIILDVVENALPSGMPDGISGFAKLQDIFQKALELLPLLMKKAGNHHETIASYRRALSRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="F17L21.25"
//d_xref="PID:g3935182"
//d_xref="PID:g3935182"
//d_xref="PID:g3935182"
//tamslation="MATEDVQDPRIAKIASSIRVIPDFPKPGIMFQDITTLLLDTEAF
//tamslation="MATEDVQDPRIAKIASSIRVIPDFPKPGIMFQDITTLLLDTEAF
//tamslation="MATEDVQDPRIAKIASSIRVIPDFKPGMFPKKLPGKVISEE
XSLEYGTDTIEMHVGAVEPGERAIIIDDLIATGGTLAAAIRLLERVGVKIVECACVIE
LPELKGKEKLGETSLEVLYKSAA"

1011(78862...79059,79153...79411,79507...80678,80747...80891,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="putative adenine phosphoribosyltransferase 1 (sp|P31166); similar to ESTs gb|N65531, gb|R90631, gb|T21275, and gb|AA713070"
SRVRLVNSAYKEMMGQPECSWLDSMVRGKRICGEVMINFCESKIPVMTENNGFSCWVR
IDWGRDGKEEYMHAFCDVTKLACDSKDYVFTWRFHTTTDRR"
                                                                                              SRVISPQPIRPVCSKINVAYINPLTNPSPTSQTSKKSPREVEEDVESDDLPSVITDSN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VLDSIGFSIWQIALAPISIEAESKEAKLIQNGYLSEKSDDEEESGVEDDSELDELDEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GASSWHCQLIIHGDPKSRISHLAWFGTGSKGSSSARLFSSSIDGSISEWDLFDLKQKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /evidence=not_experimental
/product="F17L21:27"
/db_xref="P1D:93935184"
/translation="MFEYRCSSIDWKPSPVVALATSADGSQVAAAREDGSLELWLVSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ELELSAPVQSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KAVLQMAQEQPKKAMKTCSSLLGLIRAQEKSEQSESLLQKFETEAWQDLASVYGKLGS
WSDAETCLEKARSMCYYSPRGWNETGLCLEAKSLHEEALISFFLSLSIEPDHVPSIVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       join(78862..7
80999..81309)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="E17.21.24"
/db_xref="PID:3935181"
/db_xref="PID:3935181"
/tanslation="MFAAEIFMHRFILLSSPVRTRNPDEADWFYTPIYPTCDLTPTGLP
/translation="MFAAEIFMHRFILLSSPVRTRNPDEADWFYTPIYPTCDLTPTGLP
LPFKSPRMMRSSIQLISSNWPYWNRTEGADHFFVVPHDFGACFHYQEEKAIERGILPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /evidence=not_experimental
/product="F17L21.26"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NNDPEGGYYARGARAAVWENFKNNPLFDISTDHPTTYYEDMQRAIFCLCPLGWAPWSP
RLVEAVVFGCIPVIIADDIVLPFADAIPWEEIGVFVAEKDVPELDTILTSIPTEVILR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IAEVMMKSGDESLPTAKSFLMNALRLDPRNHDAWMKLGHVAKKQGLSQQAAEFYQAAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     join(76306. .76387,76478. .777484. .77542,77636. .77692)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KQRLLANPSMKRAMLFPQPAQPGDAFHQILNGLARKLPHDKSIYLKTGEKALNWTAGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LQRATLVQTFGQRNHVCLDEGSITIPPFAPPQKMQAHFIPPDIPRSIFVYFRGLFYDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .76588,76756.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .76848,77250.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .84922
```

lecithin:cholesterol acyltransferase

```
Best Local Similarity Matches 136; Conserv
                                                                                                                                                                                                                                                                                                                           ATTTAAATTGTAAAGCTTTACAAGCATCTGTGAAA 11840
                                                                          ATGGAGACAGGTCAACCAAAGAGGGAGCTAGGCAA 932
                                                                                                                                                                                                                                                      TAACATCCATATGACTGAACACTTGTATGTGTTTGTTAAATATTTCGAATGCATGTAGATT 837
                                                                                                                    TGTTAAATGTGTGTGTATAGTAACACTGAAGAACTAAAAATGCAATTTAGGTAATCTTAC 897
                                                                                                                                                                                                                      ACCAAATGTGATGCATGGTGGATCCAGAAAAACAAAAAGTAGGATACTTACAAT----CCA 777
                                                                                                                                                                                                                                                                                                                                                                                                                             ACAAACCAGAAAATTTACTATGGGTATAAGGTTCACCACTAGAACTTGAATGATTTTAAT 12055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACACAGCCAACATTITAGGAACTTICTAGATTATAGCATAAGGACATGTAATTTTTGAAG 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /Product="F1721.30"
//Product="F1721.30"
//DEXTEG="PID: 3935187"
//CIANS LATION="MOLASTREGGKIADFGFKKPRWVEGKILKLNGKCRPYITIGIEN RURPYSCLFEIKKKEGGSYNESHSNADOMFDTTIEELCKNICELOSSNOSPSROSFGS YGDESKIDSDLOHLALGEMRDIDILEDEGJDEDVAKPEEFDVKSNUSSNLDLEVMPRDH RURPYSCLFEIKKKEGGSYNESHSNADOMFDTTIEELCKNICELOSSNOSPSROSFGS YGDESKIDSDLOHLALGEMRDIDILEDEGJDEDVAKPEEFDVKSNUSSNLDLEVMPRDH DSTHKALELTHRAAKLFEASAENGKPCLEWINGKLEVTAKHCKLKEYNEAIPVLORSV EIPVVEEGEEHALAKFAGLMOLGDTYAMVGOLESSISCYTEGLNIOKKVLGENDPRVG EIPVVEEGEEHALAKFAGLMOLGDTYAMVGOLESSISCYTEGLNIOKKVLGENDPRVG EIPVVEEGEHALAVOALRFDEAOQVCETALSIHRESGLPGSIAEAADRRLMGLICETKGDH GENHPAVGSVYIRLADLINTGKVREAKSYCENAALRIYESHNLEISPEIAKGLTDIS GENALBHLVLASAMMAANGCESEVAFVDTSIGDSYLSLSRFDEAICAYQKSLTALKTAK VICESNNEVEQAITLLOKALKIYADSPGCKIMIAGIEAOMGVLYKMGKYMESYNTFK TLGLYSNLAGAYDAIGRLDDAIKLLGHVVGVREEKLGTANPVTEDEKRRLAQLLKEAG NVTGRKAKSLKTILDSDLTSSSALR"

TUGTSULAGAYDAIGRLDDAIKLLGHVVGVREEKLGTANPVTEDEKRRLAQLLKEAG NVTGRKAKSLKTILDSDLTSSSALR"

18594 c 18732 g 31309 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /evidence=not_experimental
/product="F17L21.30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="similar to kinesin light chain (Z25664); to EST gb|R90451"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(join(95514. .95715,95789. .97565,98312. .98357,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="MKKISSHYSVVIAILVVVTMTSMCQAVGSNVYPLILVPGNCGNQ
LEVRLDREXKESSWCSSWLYPLHKKSGGWFRLWFDAAVLLSPETRCESDRMMLYYDP
DLDDYQNAPQOTRVPHFGSTKSLYLLDPKLROATSYMEHLYKALEKKCGYVWDQTIL
GAPYDFRYGLAASGHPBRVASOFIOLKGLVERFTSSNEGKPVILLSHSLGGLFVLHF
LNRTTPSWRRKYIKHFVALAAPWGGTISOMKTFASGNTIGVPLVNPLLVRRHGRTSSE
NQWLLPSTKVFHDRTKPLVVTPQVNYTAYEMDBFFADIGFSGCVVPYKTRVLPLTEEL
WEIDGVSTTSILKDEIALKEIMKQISINYELANVNAVNE
COMPLEMENT (JOIN (90258. 90471,90595. 90775,90859. 90958))
/NOTE-"$imilar to MYB transcription factor isolog
(AC002335)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MEWSLPVDLQEEILSRVPAKSLARWKSTPKOWKGPISIEFLHLL
RSTLKFPLMLHLKSKSIYVTSFTAMVFCYAPPSTKDSRFGIHYOGKBSGFLADEONK
VVVCCKWRSDSINTIYFVGENKHVOVDORRGDLTLGGSCSFLMNYVPSFVQIQOGTLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /evidence=not_experimental
/product="F17L21.29"
/db_xref="PID:93935186"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /evidence=not_experimental
/product="F17L21.28"
/db_xref="PID:93935185"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      precursor (M26268)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 41; DB 39; I
Pred. No. 3.9;
0; Mismatches 135;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 39; Length 99689;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 14
AC000348/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (24-JÜN-1997) Arabidopsis thaliana Genome Center, Department of Biology, University of Pennsylvania, 38th Str Hamilton Walk, Philadelphia, Pennsylvania 19104-6018, USA On Jun 10, 1997 this sequence version replaced gi:2155227.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
Submitted (09-JUN-1997) Arabidopsis thaliana Genome Center,
Department of Biology, University of Pennsylvania, 38th Str.
Hamilton Walk, Philadelphia, Pennsylvania 19104-6018, USA
(bases 1 to 111390)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (03-JUN-1997) Arabidopsis thaliana Genome Center, Department of Biology, University of Pennsylvania, 38th Str Hamilton Walk, Philadelphia, Pennsylvania 19104-6018, USA 5 (Dases 1 to 111390)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (24-APR-1997) Arabidopsis thaliana Genome Center, Department of Biology, University of Pennsylvania, 38th Str Hamilton Walk, Philadelphia, Pennsylvania 19104-6018, USA 4 (bases 1 to 111390)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ecker, J.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ecker, J.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (06-MAR-1997) Arabidopsis thaliana Genome Center, Department of Biology, University of Pennsylvania, 38th Street and Hamilton Walk, Philadelphia, Pennsylvania 19104-6018, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ecker, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Buehler, E., Dewar, K., Feng, J., Kim, C., Li, Y., Shinn, P., Sun, H., Conway, A., Conway, A., Kurtz, D., Oji, O., Osborne, B., Shen, Y. K., Toriumi, M., Vysotskaia, V., Yu, G., Davis, R.W., Federspiel, N.A., Theologis, A. and Ecker, J.R.

Genomic sequence for Arabidopsis thaliana BAC T7N9

Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Arabidopsis thaliana
Eukaryotae; mitochondrial eukaryotes; Viridiplantae;
Charophyta/Embryophyta group; Embryophyta; vascular plants; seed
plants; Magnoliophyta; Magnoliopsida; Capparales; Brassicaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sequence.
AC000348
92182287
HTG.
thale cress.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC000348
Genomic s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ecker, J.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 111390)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to 111390)
/translation="SSRISARRSOSSRLSSLYIOSSSYNDDTSVASLQTPRSEGELLA SPTLKARTENELTARRENDSVIGEGGGGYVYKGWIDERTLSPSKPGSGMYVAVKK ENTLKARTENELTARRENDSVIGEGGFGYVYKGWIDERTLSPSKPGSGMYVAVKK LKEEGFOGHROMLAEVDCLGRLHHMNLVKLIOYCSKGDHIRLLVYEYMPKGSLENHLF RKKTCLSSGABPIPMRTRIKVAIGAARGLAETHEAQVIYRDFKASNILLDSGENAKL SDFGLAKVGPTGDRTHVSTOYMGTOGYAAPEYVATGRITAKSDVYSFGVVLLELLSGG LTVDKTKVGVERNLVDMAIPYIGDKRKVFRIMDTKLGGOYPHKGACLTANTALOCLNO
                                                                                                                                                                    /evidence=not_experimental
/product="T7N9.1"
/db_xref="PID:g2213581"
                                                                                                                                                                                                                                                                           Join(1465. .1811,1909. .20)
/note="similar to protein to EST gb|T14833"
                                                                                                                                                                                                                                                                                                                                                /organism="Arabidopsis thaliana"
/db_xref="taxon:3702"
/chromosome="1"
                                                                                                                                                                                                                                                         /codon_start=3
                                                                                                                                                                                                                                                                                                                                                                                                                                        , 1997 this sequence version replaced Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            111390 bp
quence for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Arabidopsis thaliana
                                                                                                                                                                                                                                                                                              .2068,2232. .2362,2562.
in kinase, 5' incomplet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BAC
                                                                                                                                                                                                                                                                                         incomplete;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       T7N9, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24-JUN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Shen,Y.K.,
```

BASE COUNT ORIGIN

31054

CDS

Query Match Best Local 9

12114

Street and

Street

Street and

Street and

722

778

밁 δÃ 뭐 δÃ 밁 δÃ 밁 δÃ В Ş

11874

```
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /ITTANSIATION - 'MYKKGGKMKINGSTPULDGGSVYKGNATLEDGGSLIPSTATICE (
RESPVYGGRGFKVSDSGENPILLHSSDHPGLISTVAHTLDGSNYKSHAMTISLDAKN
RIGFVDGSLIPSVDSTFRIWSRCNSMYNNLPRRYQLEQAVMILOGKLDLSTYFTK
KKTIMEQLANTKSRSVKKCDCDQVKELLEBAETSRVLOFLMGLSDDFNYIRGQIFKNK
KKTIMEQLANTKSRSVKKCDCDQVKELLEBAETSRVLOFLMGLSDDFNYIRGQUFKNK
PREGLINEITMALDQDESQRLVGFAAKSVPSPSPAAFOTOGGULNDQNTILLAGGNFKKP
PREGLINEITMALDQDESQRLVGFAAKSVPSPSPAAFOTOGGULNDQNTILLAGGNFKKP
RCTHCHRICATVAKYKVKYVFYPGBHPRAKENTYVGSTNLASTDQIETQAPPTMSATGH
KCTHCHRICATVAKYTAVETQFBEFFRILLSVSLTRYLASTDQIETGAPPTMSATGH
KCTHCHTDALSLHANUFIPEFFRINLLSVSLTRYLASSNBPYPSISQITGTFILLNDSTYY
EMALTSIPITELSLRAWUTDGSSITSGFBKALASSSNBPYPSISQITGTFILLNDSTYY
EMALTYSIPITELSLRAWUTDGSSITSGFBKALASSSNBPYPSISQITGTFILLKDSTYKLLML
KGSQYGLYYILLDKSLVDVSSFPGHPSFAKIDTLGSKVSFTSDECMIQALTKELMLG
KGSQYGLYYILLDKSLVDVSSFPGHPSFAKIDTLGSKVSFTSDECMIQALTKELMLG
KGKDYSSIKAFGCLCYCSTSPEKFNLLSVSULTRYLSFRYELINKLSSPCHITLL
KGSQYGLLYTVPPSFLKMVETQYITKYCSSVSFTSDNAHELKSNELFAKEGIKADHFCPETTEQ
KGKEDYSSLKAFGCLCYCSTSPEKSTEKDERAKGIFLCYMGKYGYKLLDIETYSVS
ISHHVIFYEDIFPASSNITDDAKDFFPHIYLPAPNNDEHLPLVGSSDAPHNHDESS
ISHTVIFYEDIFPASSNITDDAKDFFFHIYLPAPNNDEHLPLVGSSDAPHNHDESS
ISHTVIFYEDIFPASSNITDDAKDDFFTHIYLFAPNNDEHLPLVGSSDAPHNHDESS
SMIFVPSEFFRAKLDKVANDAMGKEISAFVRTGFWSICDLPAGKVAVGCKWITTI
KFLAGGSIERHKARLVAKGYTQOEGIDFFTFTSFYPAKCHGGHTLFVKAQDGFFLVVLVY
DISNALLNGDLEETIYNKLPSGYSEIGGGEVSPNAKCHGGHTLFVKAQDGFFLVVLVY
SKLAQYSSAPTDILQALHKILAYLKGTIGGGLEYGATWEDLGRENGALLKIFFKTPDINFAV
SKLAQYSSAPTDILQALHKILAYLKGTIGGGLEYGATWEDLGRESDSDWOTCPDTR
SKLAQYSSAPTDILQALHKILAYLKGTIGGGLEYGATWELGKLGYILTAFKIPF
THPAYLYCDNEAALLIANSVFHERTKHLENDCHKVRECIEAGILKTIFVENDQLAD
TLTKPLYPKPERNOKLGLLNIYEAGA*

1066, 1664. 16234, 16347. 15687. 15748, 15834. 15911, 15991. 16066, 1669. 1175928*

17844. 17927)

17834. 17927)

17834. 17927)

17834. 17927)

17846. 1639, 17201. 17272, 17475. 17525, 17688. 17773, 17667. 17699, 17701. 17775, 17475. 17525, 17688. 17773, 176060, 1516164. 16393, 1016164. 16393, 1016164. 16393, 1016164. 16393, 1016164. 16393, 1016164. 16393, 1016164. 16393, 1016164. 16393, 1016164. 16393, 1016164. 1639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement(join(9987. .11012,11109.
14075. .14464))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="PID:92213582"
/translation="MVKKGGKMKTRGSTPDDEGSAVRSVREAAILEDQKLTTLKQQLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14075. .14464))
/note="TA1-like retrotransposon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VEMINLYNYFGGKSTKLPEMLPVNORRNILLADVETKGLKNIAEELEKSNGTQVTTTV
KQISLSKVNVKSRPLLSKCDKGNVNAGLLQLSVDMEVFLMAVWLAGCI"
join(20094. 20132,20210. 20362,20796. 21014,21105. 2122
21317. 21480,21572. 21726,21798. 21878)
/note="similar to T7N9.5; similar to ESTs gb|T21578,
gb|T46181, gb|H36893, gb|T46690, and gb|T46636"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="pid:g2213583"
/tbanslation="MAMQAGVGLSRIFLLAGAGYTGTIMMKNGKLSDLLGELQSLVKG
/translation="MAMQAGVGLSRIFLLAGAGYTGTIMMKNGKLSDLLGELQSLVKG
/translation="MAMQAGVGLSRIFLLAMEIROLASQQHITVMNGVSGANLQALAVPAAA
MEKSGEGESEGDSDVSDAIAAQVRLAMEIROLASQQHITVMNGVSGANKRHLTQRIQN
LGALGYGYMWWKGLSFTDLMYVTKANWAAAVANLTKNLEQVSETLAAAKRHLTQRIQN
LGALGYGYMWWKGLSFTDLMYVTKANWAAAVANLTKNLEQVSETLAAAKRHLTQRIQN
LDBKVEKQIDLSKEINSQVISAAENISSLEMDLESLHNLTGLDGKLDTLEYKQDVTN
LDDKVEKQIDLSKEINSQVISAAENISSLEMDLESLHNLTGLDGKLDTGEVKQDVTN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="77N9.4"
/product="77N9.4"
/db_xref="pid:g2213584"
/translation="MGSLDLPYASSFKGGSETFLQNVFESILKTYLRKNPMAKTIWEL
/translation="MGSLDLPYASSFKGGSETFLQNVFESILKTYLKNPMAKTIWEL
/translation="MGSLDLPYASSFKGGSETFLQNVGKVGGRLDFPKKKVQVLWLSP
/KSVDNEKISYDHFFFKVDGYGIDSLASFFENDYGYKVGGRLDFPKKVVQVLWLSF
PDVHFPDNGYCIGNGPLPRLVLAELLVEELSPESQEIIRKYLKPEGGKQAVLSSTLGS
PDVHFPDNGYCIGNGPLFRLVLAELLVYGYTMNHLAFAVHRLKHRFSDLKCVKEYFEEN
LIWEKPTSTDFNQLAKESEFAAWTLVYGYTMNHLAFAVHRLKHRFSDLKCVKEYFEEN
LIWEKPTSTDFNQLAKESEFAAWTLVYGYTMNHLAFAVHRLKHRFSDLKCVKEYFEEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DMPCDETKEFHRREGLEGASAYHIMESTRFTA"

join(23301. 23399,23416. 23568,23660. 23878,23967. .24082,

join(23301. 23399,23416. 235685 .25171)

24559. 24722,24830. 24993,25085 .25171)

/note="similar to T7N9,4; similar to ESTs gb|T46181,

/note="similar to T7N9,4; similar to ESTs gb|T46690, and gb|T46636"

gb|R29915, gb|H747776, gb|H36893, gb|T46690, and gb|T46636"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /evidence=not_experimental
/product="T7N9.3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence=experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
/d_xref="PID:92213585"
/daxref="PID:92213585"
/translation="MCSFDLPHSSSFKGESEIFLRNVFENILKTYLRKNPTAKTIWEL
/translation="MCSFDLPHSSSFKGESEIFLRNVFENILKTYLRKNPTAKTIWEL
/translation="MCSFDLPHSSSFKGESEIFLRNVFENILKTYLRVPTAKTIWEL
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION="MCSFDLPHS"
/TRANSLATION
                                                                                                                                                                                                                                                                                    /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                         codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .12706,12764. .13970,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .16066,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sgo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
```

Manager 1984

CDS

```
/evidence=not_experimental
/product="TYN9.7"
/bproduct="TYN9.7"
/db_xref="PID:g2213587"
/db_xref="PID:g2213587"
/db_xref="PID:g2213587"
/db_xref="PID:g2213587"
/translation="MENSDIDSEVFFWFQNQNQNHSHKFPSSCFPPSSHSAFYGSSSM
/translation="MENSDIDSEVFFWFQNQNQNGNLEEGSFEEEERRLEPDRKLWLAEKL
INTERAINDEEDVCESYMMREITKKRLITPIQLELLEESFEEEERRLEPDRKLWLAEKL
INTERAINDEEDVCESYMMREITKQLEHDCDSLKASYAKLKFDWDDILFVQNOTLKSKVQFL
GLQPSQVAVWFQNRARYKTKQLEHDCDSLKASYAKLKFDWDLITPVQNGTQISSVKSDNTQ
NRLTSHYFQESYQNEFQYVDDFLTASNLEQEPLKYTCADDMTQIO.SDVTEPAS
YSEEGLENQYSFPELAVLGFYYDDFLTASNLEQEPLKYTCADDMTQIO.SDVTEPAS
SAHVNSCRSSSNSTKRDKPYTNRHTPARISKRRFWAPSSS
SAHVNSCRSSSNSTKRDKPYTNRHTPARISKRRFWAPSSS
SHDEIIDKPITKPPPPPALVYMGLFANGYLELKSRFEIYGSISRIRIHKDGIGSVSY
EHDEIIDKPITKPPPPPALVYMGLFANGYLELKSRFEIYGSISRIRIHKDGIGSVSY
RTAESAERAIAGSHEPSFGISIDSKKLEVWANTDPLYKMKEGVTNGEGKERTSSTSSK
IT PRIVATE SEVINGESTER SE TINNFRENDER THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL TH
/MD_XTGE="PII:32213589"

/db_XTGE="PII:32213589"

/db_XTGE="PII:32213589"

/db_XTGE="PII:32213589"

/translation="MCNKRNLGWDSEGSKDLETEILEFMKNSEKPGMFPSKKDLIRSG
/translation="MCNKRNLGWDSEGSKVRVNENVTPODIHIEKOLPNCNSPEMDKTLN

RFDLVERIVNOGGWLSMGWDLDEQEEKVRVNENDEJSLGISVRENGKSNGAMHDIS
HODLDSSNLSSSTEQVESKNDSGIEGIITRLEKERNLSLGISVRENGKSNGAMHDIS
HODLDSSRITTASEICOEVDGSRGSGEYAGSRYGGAKSVSGKPGLSSDYBTTHIKH
SYKRAGFTDEDFEAAEISSSGLTGVKKDDTKKDSGDSMNGKDRIASSEDVNKTHIKH
SYKRAGFTDEDFEAAEISSSGLTGVKKDDTKKDSGDSMNGKDRIASSEDVNKTHIKH
SYKRAGFTDEDFEAAEISSSGLTGVKKTDSGTANLENLSDDWEYKENEIIHAONKLR
RICOLOGSELSSYLHSLKSPDDKYVTSKOSETTAGNLENLSDDWEYKENEIIHAONKLR
STRAKLAVLEGKMAMAIIDAQRIVREKORRIDHASRALFLLFTASIVWPNSASEVLLT
GSFDGWSTOIKFIVDGGWKVDDLEFIVTSGGYENNLLIIS"

JOIN(42641. 42830) 43041. 43258,43725. 44287,44375. .45248)

/note="similar to transport protein; similar to ESTS
gb][743913 and gb][146413"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LIMEKPTWIDFKQLAKESEFAAWTLIHGYIMNHLAFAVHRFKHRFSDIKFVKQRLEEK
GFKLNSDGEILKVSQDGLLFQVGSISEKLPVTFADGVTETIPASYIEFTQRQVLPEFK
DVPLDEVIDIKEFHRREAFELDNANHVMESTRFTTKF"
complement(join(28352. .29284,29376. .29813,30850. .31067,
31195. .31297))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LANASNIVIZIKNEMINSLARSSSEVTTEMATAFILIALIGGELADAFFSTEVIFLISA
SIEFLGLILLTIQARRPSLMPPPCKSSAALRCEVVGGSKAAFLFVGLZUVSLGIGGIK
GSLPSHGAEOGPDEGTPKGRKORSTERVIXVERLSCGALVAVTEVVMIEDNIKGWEWGFF
VSTISIFLSILVELLGSETYKNKIRDERSPLTIFKVLLAASIVSCSSKTSSNHETSRE
VQSEHEEKTPSQSLTNSLTCLNKAIEGKTHHIWLECTVQQVEDVKIYLKMLPTEGCTI
VQSEHEKTPSQSLTNSLTCLNKAIEGKTHHIWLECTVQQVEDVKIYLKMLPTEGCTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31195. .31297))
/note="similar to transport protein; similar to ESTs /note="similar to transport protein; similar to ESTs emb[217614, gb[T14067, and emb[Z17615"]
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KYTKSEIGITHLQRIGVGLVLSIVAMAVAALVELKRKQVAREAGLLDSEETLPITFLW
IALQYLFLGSADLFTLAGLLEFFTEAPSSMRSLATSLSWASLALGYYLSSVMVPIVN
RVTKSAGQSPWLGEKLNRNRLDLFYWLMCVLSVVNFLHYLTWAKRYKYISTGSIS
101n(33352...33469,33706...34339,34852...34978,35132...3550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="similar to leucine zipper protein; similar to ESTs gb|T21286 and gb|T04740" /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="PID:92213586"
/translation="MHGDVSKWEGYADWRNKAALRGRHGGMLAASFVLAVEILENLAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /evidence=not_experimental
/product="T7N9.6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VYCGSGFTYAVKRKQELSPTSS"
complement(join(38404...38499,38806.
39284...39498,39579...39756,39845...4
/note="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LLRPVMPLRKHGRSSRLASAIVNPRSDNTKGISGDGGISSPATTSEVKQRNIVTYDDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              )oin(36482.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="similar to Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product-"T7N9.9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .35867)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5482. .36677,36759. .
.37607,37687. .38132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 p619"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .36911,36993. .37151,37225. .37383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .40010,40104. .40453))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               38953,39043.
```

```
FRY IRLKSCYGKYLTASSERFELGATOKKYOLKLSKYDSSVEWEPLERGSKIKLRTR
GGNYLRONGGLEPWRNSVTHDVPHLSATODSISWDVDVVEILIDSEFKTESAKAPPK
TTSPPHRRPTSSPLSAESPRISSSLSDRSDSDVSTFPKFLKHLWFCLKLQLYRFPVI
ENTDFDEDQSVUSSPKSDGRTITYHVADEEGHVEDETTVGVARTFKGNSVAELIQTLR
EETCMEDAVVCTRSPLNGKLFPLRLQLPPNNGTLHVILLPSSASL*
complement(join(54477. .54572,54654. .54754,54815. .54899,54991. .55080,55175. .55526,55321. .55427,55516. .55623,55710. .55839,55935. .56029,56119. .55427,55383. .56484,
56600. .56698,56843. .56978,57249. .57307),
note="unknown; similar to EST gb|AA394730"
                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="piD:g2213593"
/translation="MRSTPLOWIALLPLTLILTREKKVILEAPNYDNDCVLANILAAH
/translation="MRSTPLOWIALLPLTLILTREKKVILEAPNYDNDCVLANILAAH
YLSSPDPVRARGYSLAAFSRIGKATLYEKAVFEAVSYLLSENNDDDVALELHSKILKK
FPKDLLSWKRVETLCSYMGRHDLSLPLFRKILFQNEGQYYVNGMLAFCLIELGHILFEA
FPKDLLSWKRVETLCSYMGRHDLSLPLFRKILFQNEGGYYVNGMLAFCLIELGHILFEA
FEBAARGCEINENDSWAHHALCHYLQTECRFKEAVKFMEEHSDSWDSCSSLRESHNWM
                                                                                                                                                                                                                                                                                                                            HVAVCYLEGGSHISKVEEVYDHOMWKELEKDDAVARDVYTDALGLLLRIDTRGKIDDG
FQDRLEKLADSLTDKAMWYQDWLFDITTIWALSKVEKTSLAHELLEGLKSRTSANNPK
KQKLMQKAILLAEAVYEYGKGNYEIALELLGLDFDAANYKVIGGSGLOMDVFNEIWYK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence=not_experimental
/product="77N9.12"
/product="77N9.12"
/db_xref="pil:92213592"
/db_xref="pil:92213592"
/translation="Meletkgnukklrshldkflyadddoetiroorkgdarraywīv
EPVVDKNNLIRLKSSHCTYLTASNKPLLLGMTGEKVTGTASFNKLADDWGTQMEPERDG
FQVKLKSWCGKWMRANGGTPPWRNSVTHDEPHTSKTKNWLIWDVITIDGSDLENMSDG
DESSVSSPVGSEFGSEPGSPVSARSTKSSISRFASLGLSTSPRWSKPKSTASSFNQK
ETPVSVSAMEFFQKAKAIRMRNSHNKYLTADDDEETVTQNRNGSTKNARWTVEPVRDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LINEQEEURSKEAVVILIDELEKIRAPUSAVVEEISLATQLINRASSOQTTASEQKE
VYDIPQEVSGGDDGAKLEDLYNFLYFGSLFDVKSQNEFTSIMLTRTHERSCCLSYDYV
TDATDLLGDRDLDSISQLWSLMYSRPVDSSLSHKNALERCVEHAKLMLANSEQPIES
NCNTSCKIKIFKSICDADALLEKLKIMASDYFTTPEBENKAPVDVAAAGNYTSYQV
VYDVPASGHYQQKEEDASNSKEVESVVNDQSQQDEHQKVELVTEGEVVHQQDEGYTQ
VGGAENAKRDYPVPRGSYONGRGRRGARGGGGYQNGRYESYDQSG
GNGYQRNYYNNRGRGRGGGGGGNGRGRFSARRGGGGYQNGRGRGSTQQGG
COMplement(join(49016. .50053,51910. .52533))
/note="unknow, similar to ESTs dbj|C22029, gb|T46021, and
                                                                         /evidence=not_experimental
/product="T7N9.14"
                                                                                                                                                                                                                                                                                 SAGKKAKALESSYFKSA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(join(49016. .50)
note="unknown, similar to
jb]104347, gb|N37850"
                                                                                                                                                                                                                                                                                                 LLLLNGKSSTATNSAFTTPEPAAIEVLEKVTKQRDGAPFLWRLLEESYSMEGKEKAGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /evidence=not_experimental
/product="T7N9.13"
translation="MKKSKLDNSSSQIRFGLVQFLLVVLLFYFLCMSFEIPFIFRTGS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="PID:g2213591"
/translation="MAATASSEASEGPVMGLINKRLRALRKKYNRITOMBESISOGKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="unknown; similar to ESTs gb|T44556, gb|U74100,
gb|L38131, gb|AA395480,"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /evidence=not_experimental
/product="T7N9.11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="unknown;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            evidence=not_experimental
                                                                                                                                                                                                       .64867,64960. .65067,65160. .65369)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gb|AA394730"
                                                                                                                                                                                                                               .64417,64491. .64619,
```

SGS

CDS

CDS

CDS

SDIRERSSAENGLVTLQKTLIKELFRLVPEIEDVSIGLEKIKANVHEKKIIVVLDDVD

misc_feature

```
/note="similar to Bronze-2 p.
/note="similar to Bronze-2 p.
gb|H76491, gb|H36232, gb|H371
emb|Z26546"
/product="T7N9.18"
/db_xref="p1D:92213598"
/db_xref="p1D:92213598"
/translation="MYKTGDVSDQRSRLEWDVFLSFQRDARHKFTERLYEVLVKEQVR
/translation="MYKTGDVSDQRSRLEWDVFLSFQRDARHKFTERLYEVLVKEQVR
VWNNDDVERGHHELGASLVEAMEDSVALVVVLSPNYAKSHWCLEELAMLCDLKSSICR
LVLPITYEVEPCMLRRQNGPYEMDFEEHSKRFSEEKIQRWRRALNIIGNIPGFYYRLK
YDVFLSFRGADTRDNFGDHLYKALKDKVRVFENDNEGMERGDEISSSLKAGMEDSAASV
IVISRNYSGSRWCLDELAMLCKMKSSLDRRILPITYHVDESHVRQSDHIKKDFEEHQ
VRFSDEKEKVQEWREALTLVGNLAGYVCDKDSKDDDMIELVVKRVLAELSNTPEKVGE
FIVGLESPLKDLTGLLDTESSSGVQVIGLYGMGGIGKTTLKAFYNKIYGNBPEQRAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POODUCE "TYPE, 17"

/DEDAUGE "TYPE, 17"

/DEDAUGE "TYPE, 17"

/DEDAUGE "PID: 92213597"

/CIANS lation "MKVLSYGRKRKVILEAPLYDKDCVLGSILAAHFLSSSDPSRANS
YVEAAASKILEQSTPYEKAVYEAVYELISEDRDDDLAFEHHEKLLKRFPKDLASLKRAQ
LLSYMGQPDPFLGLVQQULPANQEESYIHGLLAFPLLELGRMEEAAASRKGYEINK
EDAWAHHCLCHVLQHECRFKEAVEFMEALAGTWPSCSSEMYTHWWHVALCYLEGGSP
MSKVEEIYDHHIWKELEKDDAVPPEVYLNALGLLIRLDVRDALDGFEDRLKNLAVRLT
NQANWYLEWHLDILIVWALAKVGETSRAHELLEGLKFRLSKKKKQOVMQKGIQLGE
AVYEYARGNYEKALELLGSEFNAIGYKIVGASADEQIDVREMMCQLLLKTGQSSTAKE

AVYEYARGNYEKALELLGSEFNAIGYKIVGASADEQIDVREMMCQLLLKTGQSSTAKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="similarity to valyl trNA synthetase; predicted
non-functional because of reading frame shift"
join(75036. .75508,76209. .76649,76746. .77862,77947. .78357,
78445. .80043,80124. .80678)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /evidence=not_experimental
/product="77N9.15"
/product="7TN9.15"
/db_xref="pID:92213595"
/db_xref="pID:92213595"
/translation="mANUDTYKLIGSWSSPYSLRARVALHLKSVKYEYLDEPDVLKEK
SELLLKSNPIHKKVPVLLHGDLSISSSLNVVQYVDEAWPSVPSILPSDAYDRASARFW
AQYIDDKCFAAVDAVVGAKDDEGKMAAVGKLMECLAILEETFQKSSKGLGFFGGETIG
YLDIACSALLGPISVIEAFSGVKFLRQETTPGLIKWAERFRAHEAVKPYMPTVEEVVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   73851.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GKLTECLAILEETFQKSSKGLGFFGGETIGYLDIACAALLGPISVIEMFSADKFVREE
TTGGLIQWAVWFRAHEAVRFWMTVEEWTELVKQRIEEGFKRNFKSNVSTSEYE"
Join(71067. .71225,71312. .71410,71569. .71670,71750. .71893,
72009. .72103,72210. .72339,72415. .72519,72624. .72730,
72806. .72857,72941. .73030,73120. .73204,73290. .73354,
73441. .73527)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence=not_experimental
/product="77N9.16"
/product="77N9.16"
/db_xref="PID:92213596"
/translation="MAQNDTYKLIGCSDDPFSIRPRVALHLKSIKYEYLEEPDDDLGE
KSQLLLKSNPIHKKTPVLIHGDLAICESLNIVQYLDEAWPSDPSILESNAYDRASARF
WAQYIDDKVKQFRDSLLHALFCFLSKLVKSBVMCLKQCFEAANALTGANNDEERIAAT
                                                                                                                                                                                                                                                                                                                                                                                       /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="similar to disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VIRERIKARDGIPFMWRLLEKSYSMEGNAEAESSARERAKKLESCYF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NETRPVAVVHSLKFCOFGCIEDFFT-HYGSFROMICKWDKLGRLGKPQCCNNR*
join(67041. 67367,67700. 68056)
/note-"similar to Bronze-2 protein; similar to ESTs
gb|H76491, gb|H36232, gb|H37163, gb|AA389825, gb|H3716
emb|Z26546*
                                                                                                                                                                                                                                                                                                                                                                                                                                     'codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="unknown; similar to ESTs gb|T88591 and gb|AA394730"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MVSQFMMELQGLKAVDGEDPPRILHFNPRIKGDWSGRPVIEQNTCYRMQWGSGLRCDG
RESSDDEEYGIDFFDGEVKCERWKRDDDDGGNNGDDFDESKKTWWLNRLMGRRKKMIT
HDWDYPFAEGKLFVLTLRAGMEGYHISVNGRHITSFYRTGFVLEDATGLAVKGNIDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AICEYGVNTVAAKYVMKCDDDTFVRVDAVIQEAEKVKGRESLYIGNINFNHKPLRTGK
WAVTFEEWPBEYYPFYANGPGYILSYDVAKFIVDDFEQKRLRLFKMEDVSMGMWVEKF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HSVYAASLPSTNPSFAPQKHLEMQRIWKAPSLPQKPVELFIGILSAGNHFAERMAVRK
SWMQQKLVRSSKVVARFFVALHARKEVNVDLKKEAEYFGDIVIVPYMDHYDLVVLKTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PVKTRIEKCPDMVSVSESEFVNRSRILVLPCGLTLGSHITVVATPHWAHVEKDGDKTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KMREFKSVSEIFVNESFFDNGGFSDEFSIFHKTAKHAISMGRKMWDGLDSGLIKPDKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GSGSDDVSSSSFADALPRPMVVGGGSREANWVVGEEEEADPHRHFKDPGRVQLRLPER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nze-2 protein; similar to
gb|H37163, gb|AA389825, g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      resistance kinase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .70175)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gb|H37163,
```

Sdo

CDS

```
complement(88382. .90187)
/note="similar to S-receptor kinase; similar to ESTs gb|T20510, gb|T45307, gb|R30033, gb|Z26201, gb|AA394/gb|Z26201, and gb|T43096"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KWIQWKGFPLENLPPDILSRQLGVLDLSESGVRRVKTLPRKRGDENLKVVNLRGCHGL
EAIPDLSNHNALEKLVLERCNLLVKVPRSVGNLGKLLQLDLRRGSSLSEFLGDVSGLK
CLEKFFLSGCSNLSVLPENIGSMPCLKELLDGTAISNLPYSIFRLQKLEKLSLNGCR
SIEELPSCVGYLTSLEDLYLDDTALRNLPSSIGDLKNLQKLHLMRCTSLSTIPETINK
LMSLKELFINGSAVEELPIETGSLLCLTDLSAGDCKFLKQVPSSIGGLNSLLQLQLDS
TPIEALPEEIGDLHFIRQLDLRNCKSLKALPKTIGKMDTLYSLNLVGSNIEELPEEFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MMRNLSLPGNRVPDWFSQGPVTFSAQPNRELRGVIIAVVVALNDETEDDDYQLPDVME
VQAQIHKLDHHKCTNTLHLSGVPRTNNDQLHICRYSAFHPLVTMLKDGYTIQVIKRNP
PIKQGVELKMHGIHLVYEGDDDLEGRENTLPEAQQTVSQKLANFFSSFEEGEASAKGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KKPLFRISESNVPGTSEEPRFVEVPNSFSKLLKLEELDACSWRISGKIPDDLEKLSCL
MKLNLGNNYFHSLPSSLVKLSNLQELSLRDCRELKRLPPLPCKLEQLNLANCFSLESV
SDLSELTILTDLNLTKCAKVVDIPGLEHLTALKRLYMTGCNSNYSLAVKKRLSKASLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FGSHFYDKDENEWQVELEKLKTQODKLHGVLALSFKSLDEEEKKIFLDIACLFLKMDI
TKEEVVDILKGCGLNAEAALRVLIQKSLLTILTDDILWHDGIRDMGRQMVHKESSDD
PEMISRRLWDGEGIMVKLDYMKGTSSIRGIVLDFNKKFARDHTADEIFSSKLKRNUPGIY
SVFNYLKNKLVRFPAEEKPKRSEITIPVESFAPMKKLRLLQINNVELEGDLKLLPSEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGIGKTTLAKAFYNKIIVNFNRHRVFIESVRGKSSDQDGLVNLQKTLIKELFRLVPEI
EDVSIGLEKIKENVHEKKIIVVLDDVDHIDQVNALVGETSWYGEGSLIVITTRDSEIL
SKLSVNQQYEVKCLTEPQALKLFSFYSLRKEKPPTQGLLELSKKIAEVTGLLPLAVKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DQLHICRYSAFHPLVTMLKDGYTIQVIKRNPPIKQGVELKMHGIHLVYEGDDDLEGRE NTLPETQQTVSQKLANFSSFEEEGEFISESESTVI"
join(81318. .81794,82755. .83236,83326. .84475,84562. .84972, 85047. .86648,86729. .87277)
/note="similar to disease resistance kinase"
PTMIQVYESLKNMADKHGVSEHYDEFPLVFNKQEA'
                                             AVLDWPTRRAIGVGAAKGLAWLHHGCQPPYLHQFISSNVILLDDDFDARITDYGLAKL
VGSRDSNDSSFNNGDLGELGYVAPEYSSTMVASLKGDVYGFGIVLLELVTGQKPLSVI
NGVEGFKGSLVDWVSQYLGTGRSKDAIDRSICDKGHDEEILQFLKIACSCVVSRPKER
                                                                                                                                                                                           GFGEKQFRSEMNKLGELRHPNLVPLLGYCVVEDERLLVYKHMVNGTLFSQLHNGGLCD
                                                                                                                                                                                                                                        IPSQLSRLDRLRRLSLAGNDLSGTIPSELARFGGDDFSGNNGLCGKPLSRCGALNGRN
LSIIIVAGVLGAVGSLCVGLVIFWWFFIREGSRKKKGYGAGKSKDDSDWIGLLRSHKL
VQVTLFQKFIVKIKLGDLMAATNNFSSGNIDVSSRTGVSYKADLPDGSALAVKRLSAC
                                                                                                                                                                                                                                                                                                                                                                                      LSSWSFPNSSASSICKLTGVSCWNEKENRIISLQLQSWQLAGEIPESLKLCRSLQSLD
LSGNDLSGSIPSQICSWLPYLVTLDLSGNKLGGSIPTQIVECKFLNALILSDNKLSGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="PID:g2213600"
/translation="MKKIFITLLWLLFISSFLCSSSSAEDDVLCLQGLKNSLIDPSSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /evidence=not_experimental
/product="T7N9.20"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KLENLVELRMNNCKMLKRLPKSFGDLKSLHRLYMQETLVAELPESFGNLSNLMVLEML
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KVDDMIDLVVKKVVAAVRNRPEIVADYTVGLESPIKDLMKLFNTESSSGIQVMGLYGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IQLEMETGVVPNRLKYSVFLSFRGFDTRTNFCERLYIALNEKQNVRVFRDNEGMEKGD
KIDPSLFEAIEDSAASVIILSTNYANSSWCLDELALLCDLRSSLKRPMIPIFYGVNPE
DVRKQSGEFRKDFEEKAKSFDEETIQRWKRAMNLVGNIPGYVCTAKTVGDDNEGINRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RVWNDDLERVDHDHDHELRPSLVEAIEDSVAFVVVLSPNYANSHLRLEELAKLCDLKC
LMVPIFYKVEPREVKEQNGPFEKDFEEHSKRFGEEKIQRWKGAMTTVGNISGFICGYE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HLTALKRLYMTGCNSNYSLAVKKRLSKASLKMMRNLSLPGNRVPDWFSQGPVTFSAQP
NRELRGVIIAVVVALNDETEDDDYQLPDVMEVQAQIHKLDHHKCTNTLHLSGVPRTNN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SLHRLYMKETLVSELPESFGNLSNLMVLEMLKKPLFRISESNVPGTSEEPRFVEVPNS
FSKLLKLEELDACSWRISGKIPDDLEKLSCLMKLNLGNNYFHSLPSSLVKLSNLQELS
LRDCRELKRLPPLPCKLEQLNLANCFSLESVSDLSELTILTDLNLTNCAKVVDIPGLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LPSSIGDLKNLQDLHLVRCTSLSKIPDSINELKSLKKLFINGSAVEELPLKPSSLPSL
YDFSAGDCKFLKQVPSSIGRLNSLLQLQLSSTPIEALPEEIGALHFIRELELRNCKFL
KFLPKSIGDMDTLYSLNLEGSNIEELPEEFGKLEKLVELRMSNCKMLKRLPESFGDLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LSESGIRQVQTLRNKMVDENLKVVILRGCHSLEAIPDLSNHEALEKLVFEQCTLLVKV
PKSVGNLRKLIHLDFRRCSKLSEFLVDVSGLKLLEKLFLSGCSDLSVLPENIGAMTSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PVESFAPMTKLRLLQINNVELEGNLKLLPSELKWIQWKGCPLENLPPDFLARQLSVLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LRKEEPTKNLLALSKKIVQISGLLPLAVEVFGSLLYDKKEEKDWQTQLDKLKKTQPGN
LQDVLELSFKSLDDEEKKVFLDIACLFLKMEIKKDEVVIVLKGCGLNAEAALSVLRQK
SLVKILANDTLWMHDQIRDMGRQMVLKESREDPGLRSRLWDRGEIMTVLNNMKGTSSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="PID:9213599"
/translation="MMKTGAVVSNPRSRVKWDAFLSFQRDTSHNFTDRLYEALVKEEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KELLLDGTAIKNLPESINRLQNLEILSLRGCKIQELPLCIGTLKSLEKLYLDDTALKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RGIVLDFKKKFARDPTADEIVSRNLRNNPGIYSVFNYLKNKLVRFPAEEKPKSSEIT1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  product="T7N9.19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gb|AA394682.
```

CDS

CDS

Query Match
Best Local Sir
Matches 136;

Similarity

3.2%;

Score 41; Pred. No. 3

DB 8; Length 111390;

Conservative

0

Mismatches

135;

Indels

4.

Gaps

۳.

```
BASE COUNT
ORIGÍN
                                                                                                                                                                                                                                                                                                                                                                                                    Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                            /db_xref="PID:g2213605"
/translation="MYGGGSKHVGEGSKPRATKDDAYAYLRAVRAKFHNDSKKYDDFV/Translation="MYGGGSKHVGEGKPRDLISGFNAFLPKCLEIKNYYFGAGEDLEVVYTAKKKLLARSVTKRSSSSSSSSVYFLFRSCEII"
19310 c 20289 g 35908 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /evidence=not_experimental
/product="7719.24"
/product="7719.24"
/db_xref="pID:g2213604"
/translation="MYERRYQVEPTLSDAHSYITAVKEAFHDEPTKYEEFIKLMNDIR
DHGVDKASGIAKLTELIKGHPRLLRGLSFFFFQVNRDIHHEAKRTIILKGKATIPPEA
AYRGAKSTYTKIKQIEPDWENFMNMLKTRFRSLDTHVVESFLKIMIMYDEGKKSEKEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="pid:g2213602"
/translation="MSVHGREPASPPISLSPSSSSTSPSSQSPSTPPDLKQRVIACLN
/translation="MSVHGREPASPPISLSPSSSSTSPSSQSPSTPPDLKQRVIACLN
KLADRDTLALASAELDSIARNLTHOSFSPFLNCIHNTDSSVKSPVRKQCVALLSVLSR
YHGDSLTPHLAKMVSTVIRTRLKDPDSSVRSACAVATADNSAHVTRQPFASVAKPLIET
LIQEGSSNLQIGAALCLAASVDAATDPSSEQLKKSLPKIGKLLKSDGFKAKAALLSAV
GSIITAGGAGTKPVLDWLVPVLIEFLSSEDWAARKSAAEALGKVATAEDLASQYKKTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /evidence=not_experimental
/product="T709_23"
/product="T709_23"
/db_xreff="pID:92213603"
/db_xreff="pID:92213603"
/tanslation="MAGEGSKPKATVDDAYAYIRTVKSTFNNDPDKYDDFMAIMKNFK
/translation="MAGEGSKPKATVDDAYAYIRTVKSTFNNDPDKYDDFMAIMKNFK
/KRANTCIEEVKELKGHRDLISGFNAFLPKCLEIADWYNIEVLEAELQAALMAMQ
HTWSKGYRKIIFEGONRTVESLLNGWYRNEFLHNLIIEIQHWRKKFSNAIIKWSFRST
NKAADRLAKGELENNYTFVSHSTR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LESRVSGLEMALDEISCDLAVSNGRVPRNSSGCAGDSCSKLPGTEFLSPKFWRKTEER PRNRNTANEMAAYDQGMRESTDTNNGQRGGSVFQKRSRRDQFQDCMHTTLQKPTTR" join(105265. .105404,105539. .105663,106614. .106903)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTALESRREDKYKKSYRETMNAALNLMKEVSTIDDEASLSPSRSSTIDGNIGCESSYTRS
STIDVGLKSARFKKYTP IMKRSPSLPVNRSYAATROKENLPKROGNMTMLVEBASSV
DIKOPHFTPYKKSSEETEERANSGGFDIIKHTISEKSREDKYKSSFGGLRSGSRVAPC
DIKOPHFTPYKKSSEETEERANSGGFDIIKHTISEKSREDKYSSFGGLRSGSRVAPC
SDDGDSVKNCKDDVEESKKDSEELSLIREQLALIENQOSSLLDLLQKFMGTSQSGIQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(join(97226. .97606,97721. .98247,98334. .98433,
98516. .99376))
/note="nuknown; similar to EST gb|N96069"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GIGKGEKNLVCVYRGVKEETLVLPSISSDEFDEFRSIVRCPNAPLNYSSSVDLQFRGD
LVKKKMKKQSRRVHNWEKVGYEAVIDGDTVVVFVKGLTRRPHKESDPSYYKCQFEIEN
SEEKEVTQAIAAAQEVVRCGLPESLKLNPEMMFRVSVIHIDPRGRTTPALPSVARIYG
                                                                                                                                                                                                                                                                                                                                                                                                                                     QEEVVDLLYYHEDLIDKFFRLFNMRK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EIELLSSENYNVSRHVWPWIKTQEAGFSHCAVRAKEECNWVGFFDVDEFYYFFTHRSQ
GLPSKNALKSLVSNYTSWDLVGEIRTDCHSYGPSGLTSVPSQGVTVGYTCRQANPERH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="unknown, similar to ESTs emb|F14134, gb|T21189,
gb|T43096, gb|T1189, gb|Z37659"
                                                                                                                                                                                                                                   /evidence=not_experimental
/product="T7N9.25"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /evidence=not_experimental
/product="T7N9.22"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SDSIEKKEKKSGVKHELCVCTMLWNQAPFLREWIMYHSWLGVERWFIYDNNSDDGIQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence-not_experimental
/product="T7N9.21"
                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                               /note="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                )oin(110027. .110187,110323. .110453,110972. .111093)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            note-"unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYVVDWQENQNQGSKDRAPGLGTEAIEPPDWKRRFCEVWDTGLKDLVMSNFADQVTGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KSIIRPELLTSSLLNEVHHFQLKEGVGHMSLVESVAVVNHYKYQVWDTFKAKFYRRVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DRISTLSVRSDSLRPSLRVPTLSVLSSSMDSFHRGRFPPLSVEDRVQFPDHLLLILSH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref-"PID:g2213601"
/translation="MTEYENGKKRKYRNKQQVKVQFLSQRYLILCFCCFFVLLFFLSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              oin(107696.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .108535)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .107835,107952. .108198,108274. .108375,
                    ģ
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 15
AC000348/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                   JOURNAI
                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             109448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   109688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTTAAATTGTAAAGCTTTACAAGCATCTGTGAAA 109414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCAAATGTGATGCATGGTGGATCCAGAAAACAAAAGTAGGATACTTACAAT----CCA 777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGGAGACAGGTCAACCAAAGAGGGAGCTAGGCAA 932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAACATCCATATGACTGAACACTTGTATGTGTTTGTTAAATATTCGAATGCATGTAGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTTAAATGTGTGTGTATAGTAACACTGAAGAACTAAAAATGCAATTTAGGTAATCTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACAAACCAGAAAATTTACTATGGGTATAAGGTTCACCACTAGAACTTGAATGATTTTAAT 109629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACACAGCCAACATTTTAGGAACTTTCTAGATTATAGCATAAGGACATGTAATTTTTGAAG
   Submitted (24-JUN-1997) Arabidopsis thaliana Genome Center, Department of Biology, University of Pennsylvania, 38th Str Hamilton Walk, Philadelphia, Pennsylvania 19104-6018, USA On Jun 10, 1997 this sequence version replaced q::2115527
                                                                                                                Submitted (09-UN-1997) Arabidopsis thaliana Genome Center, Department of Biology, University of Pennsylvania, 38th Str Hamilton Walk, Philadelphia, Pennsylvania 19104-6018, USA 6, (bases 1 to 111390)
                                                                                                                                                                                                                          Submitted (03-JUN-1997) Arabidopsis thaliana Genome Center, Department of Biology, University of Pennsylvania, 38th Str Hamilton Walk, Philadelphia, Pennsylvania 19104-6018, USA (bases 1 to 111390)
                                                                              Direct Submission
                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                                         Submitted (24-APR-1997) Arabidopsis thaliana Genome Center, Department of Biology, University of Pennsylvania, 38th Str Hamilton Walk, Philadelphia, Pennsylvania 19104-6018, USA (bases 1 to 111390)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Buehler, E., Dewar, K., Feng, J., Kim, C., Li, Y., Shinn, P., Sun, H., Conway, A., Conway, A., Kurtz, D., Oji, O., Osborne, B., Shen, Y.K., Toriumi, M., Vysotskaia, V., Yu, G., Davis, R.W., Federspiel, N.A., Theologis, A. and Ecker, J.R. Genomic sequence for Arabidopsis thaliana BAC T7N9 Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence.
AC000348
                                                                                                                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                               Ecker, J.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (06-MAR-1997) Arabidopsis thaliana Genome Center, Department of Biology, University of Pennsylvania, 38th Street and Hamilton Walk, Philadelphia, Pennsylvania 19104-6018, USA 3 (bases 1 to 111390)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryotae; mitochondrial eukaryotes; Viridiplantae; Charophyta/Embryophyta group; Embryophyta; vascular plants; see plants; Magnoliophyta; Magnoliopsida; Capparales; Brassicaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Ecker, J.R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 111390)
Buehler, E., Dewar, K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ecker, J.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              thale cress
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC000348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 111390)
                                                                                                                                                                                                                                                                                                                                                                                                                              Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            111390
this sequence version replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         do op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA PI
Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BAC T7N9, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24-JUN-1997
                                 Street
                                                                                                                                               Street
                                                                                                                                                                                                                                                              Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sun, H.,
                                                                                                                                                                                                                                                                                                                                                                              Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     109509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            721
                                 and
                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                   Sg
                                                                                                                                                                                                                                                                                                                                                                          Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
```

```
KKGFWOGSLLRSPORNSKKAMKISSULAKKLSINKKKKKAFWOGSLLRSPAKK

KKGTWEGSLLRSPODSTFRIKGRCNSKVNNLERRYQLEQAVMTLQQGKLDLSTYFTK

KKTLWEGLANTKSRSVKKCDCDQVKELLEAETSRVIQFLMGLSDEWITRSQLFNMK

PREGLNEIYMLDQDESQRLVGFAAKSVYSSSAAAQTQGYLMDQNTILLAQQNFKKP

KCTHCNRIGHTYNCYKYHGYPEDFAFPAKKENTYVGSTWLASTDQLETGAPFWKSATGH

EMITSGIPIETELSLAMVIDGSASHHYTHERRHLYTYKALDRFTYKLLNGFHYKIEG

GGFTQLTDALSLHNVLFIPEFKRNLLSYSVLTRYLQSKVSTFSDECHIQALFYKKATGH

KGSQVGNLYILMLDKSLYDVSSEPGHPSFAKIDTLSDVLMLPKQKINKDSSHCHVCHL

SKQKHLPFKSVNHIREKAFELVHIDTWGFSVTYDSKYFYLITVDDFSRATMYZLK

QKSDVGNLYILMLDKSLYDVSSEPGHPSFAKIDTLSDVLMLPKQKINKDSSHCHVCHL

SKQKHLPFKSVNHIREKAFELVHIDTWGFSVTYDSKYFYLITVDDFSRATMYZLK

QKSDVGNLYILMLDKSLYDVSSEPGHPSFAKIDTLSDVLMLPKQKINKDSSHCHVCHL

SKQKHLPFKSVNHIREKAFELVHIDTWGFSVTYDSKYFYLITVDDFSRATMYZLLK

QKSDVTATVFSSELKANGTQYHTXQCSYSDAAHHELKENELFAKGGIKADHCCETPEQ

NETVERKHCHLLNVARALMFOGSIPLEYWGDCVLTAVFLLNLLSPVLNUETFYERL

KGKPDYSSLKANGCLCYGTSFKSRTKEDPRAKACIFLGYPMGYKGYKLLDLETYSVS

SMIFVPSEPKSTRQRKLPSHLODFHCYNNTPTTTKTSPYPLTNYISYSLSDAHHHDESS

SMIFVPSEPKSTRQRKLPSHLODFHCYNNTPTTTKTSPYPLTNYISYSLAPKMWYLHQL

DISNALLNGDLEEEIYMKLPPGYSEIOGQEVSPNAKCHGDHTLFVKAODGFFLVVLV

VDD ILIASTTEAASAELTSQLSSFFQLABLGKOFFFFIGTELARNADGISLCDRKYVLD

LLASSDFSDCKRSSIPMEPNQKISKTGTLLEDGKOYRRILGKLQVLCTTRRDI NFAN

SKLAQVSSAPTDIHLQALHKILRYLKGTIGGGEVSPNAKCHGDHTLFVKAODGFFLVLLY

VDS LASSDFSDCKRSSIPMEPNQKLSKTGTLLEDGKOYRRILGKLQVLCTTRRDI NFAN

SKLAQVSSAPTDIHLQALHKILRYLKGTIGGGEFYGADINFDLRGFSDSDWQTCPDTR

THPAYLYCCONNEALHTANNWYHERFRITHTENTCHYPOTATICTTGATTETTTTTGATTCTT

THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE
                                                                                                                                                                                                                                                                                    /evidence=not_experimental
/product="77N9.3"
/product="7D19;2213583"
/db_xref="plD:g2213583"
/translation="%AMQAGYGLSRIFLLAGAGYTGTIMMKNGKLSDLLGELQSLVKG
MEKSGEGSEGDSDVSDAIAAQVRRLAMEIRQLASQQHITVNMGVSGANLQALAVPAAA
LGALGYGYMWKGLSETDLMYVTKANMAAAVANLTKNLEQVSETLAAAKRHLTQRIQN
LDDKVEKQIDLSKEINSQVISARENISSLEMDLESLHNLITGLDGKLDTLEYKQDVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="unknown; similar to ESTs gb|AA395193, and gb|T75928" /codon_start=1
                                                                                 join(20094. .20132,20210.
21317. .21480,21572. .217.
/note="similar to T7N9.5;
                                                                                                                                                                                                           VFMLNLYNYFGGKSTKLPEMLPVNQRARNLLADVETKGLKNLAEELFKSNGTQVTTTV
KQISISKVNVKSRPLLSRCDKGNVNAGLLQLSVDMEVFLMAVWLAGCI
                                                      gb|T46181,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                join(15527. .15581,15687. .15748,15834. .15911,15991. .1
16164. .16234,16347. .16448,16539. .16628,16756. .16830,
17067. .17099,17201. .17272,17475. .17525,17658. .17773,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TLTKPLYPKPFRENNSKLGLLNIYEAQA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            THPAYLYCDNEAALHIANNSVFHERTKHIENDCHKVRECIEAGILKTIFVRTDNQLAD
75|T46181, gb|H36893,
'codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14075.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /evidence=not_experimental
/product="T7N9.1"
/db_xref="pID:92213881"
/db_xref="pID:92213881"
/translation="SSRISARRSQSSRLSSLTIQSSSYNDDTSVASLQTPRSEGELLA
SPTLKAFTINELKTATRNEREDSVIGEGGFGYVYKGWIDERTLSPSKPGSGMVVAVKK
LKEEGFOGHROWLAEVDCLGRLHHMNLVKLIGYCSKGHIRLLVYEYMPKGSLENHLF
RRKKTCLSSGAEPIPWRTRIKVAIGAARGLAFTHEAQVIYRDEFASNILLDSEFNIKL
SDFGLAKVGPTGDRTHVSTQVMGTOGYAAPEYVATGRITAKSDVYSFGVVLLELLSGR
LTVDKTKVGVERNLVDWAIFYLGDKRKVFRIMDTKLGGQYPHKGACLTANTALQCLNQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /translation="Mykkggkwktrgstpddegsavrsvreaailedokittikoola
Qrsdvyggngfkvsdsgenplilhssdhpglsivahildgsnynswsiamrisldakn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /evidence=not_experimental
/product="T7N9.2"
/db_xref="PID:g2213582"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14075. .14464))
/note="TA1-like retrotransposon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EPKLRPKMSDVLSTLEELEMTLKSGSISNSVMKLTSSSSSFTAKQRVRTPVADPVLSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to EST gb[T14833" protein kinase, 5' incommlator (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Arabidopsis thaliana"
/db_xref="taxon:3702"
/chromosome="1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              lement(join(9987. .11012,11109.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .17927)
                                    .21726,21798. .21878)
N9.5; similar to ESTs gb|T21578, gb|T46690, and gb|T46636"
                                                                                                                                                                            .20362,20796.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gb|R87028, gb|W43320,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .12706,12764. .13970,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                incomplete; similar
                                                                                                                                                                   .21220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .16066
```

```
/translation="MGSEDLPHSSFKGESEIFLRNVFENILKTYLRKNPTAKTIWEL VQSLDNEKICYDHFTRILKTVGYGIDSLSSFFWAYGYKIGGGLDFKKKLRVLWFSP PDVHYVPNDGHGLGNGFULPLVIAEVLVDELSPESGGIIRKYLKQEGKQAVLSSTLGS LIWEKPTWTDFKQLAKESEFAAWTLIHGYTMNHLAFAVHRFKHRFSDIKFVKQRLEEK GFKLNSDGEILKVSQDGLLFQVSSISERLFVTFAAGVTETPASYIEFTQRQVLPEFK DVPLDEVIDIKEFHREAFELDNAHYMESTRFTTKF" COMplement(join(28352...29284,29376...29813,30850...31067,31195...31297))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /evidence=not_experimental
/product="TIN9.6"
/product="TIN9.6"
/db_xref="pID:92213586"
/translation="MHGDVSKWEGYADWRNKAALRGRHGGMLAASFVLAVEILENLAF
/translation="MHGDVSKWEGYADWRNKAALLGGFLADAFFSTFVIFIISA
/translation="MHGDNSKWEGYADWRNKAALLGGFLADAFFSTFVIFIISA
/translation="MHGDNSKWEGYADWRNKAALLGGFLADAFFSTFVIFIISA
/translation="MHGDNSKWEGYADWRNKAALLGGFLADAFFSTFVIFIISA
/translation="MHGDNSKWEGYADWRNKAALLGGFLADAFFSTFVIYITIONAGWEWGFG"
/translation="MHGDNSKWEGYADWRNKAALLGGFLADAFFSTFVIYITIONAGWEWGFG
/gspshgaegfdegfpkgrkgrkgrstffnyyyfclscgalvavtfyvwiednkgwewgfg
/gspshgaegfdegfpkgrkgrkgrstffnyyyfclscgalvavtfyvwiednkgwewgfg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        join(36482. .36677,36759. .36911,36993. .37151,37225. .37383,
37476. .37607,37687. .38132)
/note="similar to Human p619"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YSEEEGLENQYSFPELAVLGFYYDPTLTASNLRQEPLKVTCADQMTQIQISDVTEPAS
SAHVNSCRSSNDTROYKKIEVTQRSSSNSRKBOKPYTNNHTPARISKRRRPWAPSSS
EHDEIIDKPITKPPPPALVVMGLPANCSVLELKSRFEIYGSISRIRIHKDGIGSVSY
RTAESAEAAIAGSHEESFGISIDSKKLEVVWATDPLVKWKEGVTAGEGKERISSFSSK
LLRPVMPLRKHGRSSRLASAIVNPRSDNTKGISGDGGISSPATTSEVKQRNIVTYDDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="mensdidsevffwfqnqnqnhshkfpsscfppsshsafygsssm
intetatmdeedvcesymmreitkkrkltpiqlrlleesfeeekrlepdrklmlaekl
Glqpsqvavwfqnrraryktkqlehdcdslkasyaklktdwdilfvqnqtlkskvqfl
nrltshyfqesvqnfddtfkqvdllkeklkmqenletqsierkrlgeegssvksdntq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                join(3352. .33469,33706. .34339,34852. .34978,35132.
35592. .35867)
/note="similar to leucine zipper protein; similar to Egb|T21286 and gb|T04740"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KVTKSEIGITHLQRIGVGLVLSIVAMAVAALVELKRKQVAREAGLLDSEETLPITFLW
IALQYLFLGSADLFTLAGLLEFFTEAPSSMRSLATSLSWASLALGYYLSSVMVPIVN
RVTKSAGQSPWLGEKLMRNRLDLFYWLMCVLSVVNFLHYLFWARRYKYISTGSIS*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VSTISIFLSILVFLLGSRFYKNKIPRGSPLTTIFKVLLAASIVSCSSKTSSNHFTSRE
VQSEHEEKTPSOSLTNSLTCLNKAIEGKTHHIWLECTVQQVEDVKIVLKMLPIFGCTI
MLNCCLAQLSTYSVHQAATMNRKIVNFNVPSASLPVFPVVFMLILAPTYDHLIIPFAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="similar to transport protein; similar to ESTs emb|z17614, gb|T14067, and emb|z17615" /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             join(23301. .23339,23416. .23568,23660. .23878,23967. .240
24559. .24722,24830. .24993,25085. .257s gb|T46181,
/note="similar to TNN9.4; similar to ESTs gb|T46181,
gb|R29915, gb|H74776, gb|H36893, gb|T46690, and gb|T46636"
TLNKQPEKQQLQIDSSEALFEKVPDFDGVKVMQIAAGAEHSAAVTGKRGGAILLFLSS
LHSANIKQTTFECLAENGEVKTWGWGEHGQLGLGNTNDQTSPELVSLGSIDLRTKEIK
                                                                                                                                                                            TSLPSISMLACGGAHVIALTSGGKVFTWGRGSSGQLGHGDILNITLPKLVSFFDDSVI
TQAAAGWSHSGFVSDSGCIFTCGNGSFGQLGHGDTLSLSTPAKVSHFNNDSVKMVACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GFELNKDGGVLKVSEDSLLLQVSAMSEKLVVEFADGVTQIVPASYIEFVERLVLPQFK
DMPCDEIKEFHRREGLEQASAYHIMESTRFTA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="McSidlepyassfkggsetflonveesilktyleknpmaktiwel
VKSVDNEKISYDHFFFRTFKVDGYGIDSLASFFMDYGYKVGKDDFPKKKVQVLMLSP
PDVHFPDNGYGIGNGPLFLVIAELLVEELSPESQEIIRKYLKPEGGKQALLSSTGES
LIWEKPTSTDFNQLAKESEFAAWTLVYGYTMNHLAFAVHRLKHRFSDIKCVKEYFEEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /evidence=not_experimental
/product="T7N9.5"
/db_xref="PID:g2213585"
                                                                                      AAISADGQFFSWGRGFCGGPDVHAPQSLPSPLSFREVAVGWNHALLLTVDGEVFKLGS
                                                                                                                                          MRHSLVLFAGNQVCGFGSGKRGQLGFSSDRIKSVNLPCVVSGLKDVEVVRISANGDHS
                                                                                                                                                                                                                                                                       /db_xref-"PID:92213588"
/translation="MAEHGETQADEEEEEQVWSWGAGTDGQLGTTKLQDELLPQLLSL
                                                                                                                                                                                                                                                                                                                                                                  /evidence=not_experimental
/product="T7N9.8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /evidence=not_experimental
/product="T7N9.7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="PID:g2213587"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="PID:g2213584"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /evidence=experimental
/product="T7N9.4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .23878,23967. .24082,
```

```
/evidence=not_experimental
/product="77N9.10"
/db_xref="PID:g2213590"
/db_xref="PID:g2213590"
/db_xref="PID:g2213590"
/translation="MPSIFFELIGSCVQHANIMTHEHTKLLLRVMQFNNLRKYIVAI
EMESEIKLSDEKFIFSTVSSNETLEKLGSIGVSANFMLYLRNVFHMEPVEAFNVYYLW
MGLTNFAPLLGALISDAYIGRFKTIAYASLFSIIGLMTVTLTACLPQLHPPPCNNPHP
DECDDPNKLOLGILFIGGIESIGSGGIRPCSIPFGVDQFDQRTPGGLKQVASFFNWY
YLTLTMYLLFSHTVVYVLQTVSWVIGESIPTSLMACAVVLFFVGNRFYVYVKPEGSVF
SGIARVIVAARKKRDLKISLVDDGTEEYYEPPYKPGVLSKLPLTDQFKFLXAAVILD
GDLTSSEGVPANKWRLCSIGVEEVKCLIKTVPVWSAGIISIVAMTTQATFMYCOATKM
DRHMGPHFEIPAASITVISYITIGIWVPIXEHLLVPFLWRMKFRVTLLQRMGIGIVF
AILSWETAGFVEGVRARTEMTQMSVFWLALPLILMGLCESFWEIDGLIEFFNSQFPE
HMRSIANSLEPLSFAAANYLSSLLVTTWHKVSGTKDHPDWLNKDLDGKLDYFYYLIA
VLGVVNLVYFWYCAHRYQYKAGSQIEDFNEEKSLLDIEPNQRHDQSPS"
COMPLEMENT ()oin (45500. .45856,45940. .46014,46641. .46814,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /evidence=not_experimental
/product="T7N9.12"
/product="TD::9213592"
/db_xref="pID::9213592"
/translation="MELFTKCNNVKLRSHLDKFLVADDDQETIRQSRKGDARRAVWTV
/translation="MELFTKCNNVKLRSHLDKFLVADDDQETIRQSRKGDARRAVWTV
EPVVDKPNLIRLKSSHGTYLTASNKPLLLGMTGEKVTQTASFNKLMDWQTQWEPERDG
EPVKLKSWCGKWMRANGGTPFWRNSVTHDEPHTSKTKNWLIWDVITIDGSDLENMSDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="pid:q2313591"
/db_xref="pid:q2313591"
/translation="MAATASSEASEGPVMGLINKRLRALRKKYNRITQMEESISQGKT
LNKEQEEVLRSKPAVTLIDELEKIRAPLSAAVTEEISLATQLKRASSSQGTASEQKE
VTDLPQEVSGGDDGAKLEDLVNFLYFGSLFDVKSQNEFTSIMLTRTHERSCCLSYDY
TDDATDLLGDRDLDSISQLMSLMVSRPVDSSLSHKNALERCVEHAKLMLANSEQPIES
NCNTSCKIKIPKSICDADAALREKLKKIMASDYFTTTPEMKAPUDVAAAAGNYTSYQV
NCNTSCKIKIPKSICDADAALREKLKKIMASDYFTTTPEMKAPUDVAAAAGNYTSYQV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SMRRAGFTDEDFEAAEISSGLTGVKKDDTKKDSGDSMNGKDRIASSSEDVNKTHIKH RLQQLQSELSSVLHSLRSPDKVVTSKDSETTAGNLENLSDWEYKENEIIHAQNKLR STRAKLAVLEGKMAMAIIDAQRIVPEKQRRIDHASRALLTASIVWPNSASEVLLT GSTDGWSTQIKEIVDGQWKVDPLRPIVTSGGYENNLLIIS"

join(42641 . 42830,43941 . 43258,43725 . 44287,44375 . .4524
/note-"similar to transport protein; similar to ESTs gb|T43913 and gb|L46413"
                                                                               complement(join.54477. .54572,54654. .54754,54815. .54899,54991. .55080,55175. .55226,55321. .55427,55516. .55623,55710. .55839,55935. .55029,56119. .56262,56383. .56484,56600. .56698,56843. .56978,57249. .57307))
                                                                                                                                                                                                                                              TTSPPPHRRPTSSPLSAESPRTSSSLSDRSDSDVSTFPKFLKHLWFCLKLQLYRFPVI
ENFDPDQSVESPPKSDGRTIYYHVADEEGHVEDETTVGYAFTFKGNSVAELTQTLR
EETCMEDAVVCTRSPLNGKLFPLRLQLPPNNGTLHVILLPSSASL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(join(49016..500/note="unknown, similar to gb|T04347, gb|N37850"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PYDVEASGHYQQKEEDASNSKEVESVVNDQSQQDEHQKVELVTEGEVVHGQQEQGYTQ
VGGAENAKRDYVPRGSYQNQRGRRGARRGGGGYQNGRGGGGGGYQNGRYESYDQSG
GNGYQRNYYNNRGRGBGGGGGGGHGHSYNNYQDPNVAYAS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           46865. .47557))
/note-"unknown; similar to ESTs
gb|L38131, gb|AA395480,"
                                                                                                                                                                                                                                                                                                                                                                                  DESSYSSPYGSEFGSEPGSPYSARSTKSSISRFASLGLSTSPRWSKPKSTASSFNQK
ETPYSYSAMEFFQKAKAIRMKHNKYLTADDDEFTYQNNNGSTKNAKWTVEPYRDS
FHYLRLKSCYGKYLTASMERFLLGATGKKYLTQLKLSKYDSSYEWEPLAEGSKIKLKTR
SGNYLRGNGGLPPWRNSYTHDVPHLSATQDSISWDVDVVEILTDSEFKTESAKAPPPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="MCNKRNLGWDSEGSKDLETEILEFMKNSEKPGMFPSKKDLIRSG
RFDLVERIVNQGGWLSMGWDLDEQEEKVRVNENVTPQDLHIEKQLPNCNSPEMDKTLN
HGDLDLSSNLSSSTEQVESRNDSGIEGILTRLEKERNLSLGISVRENGKSNGAMHDIS
/note="unknown; similar to
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /evidence=not_experimental
/product="T7N9.11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PNGSVPWSSRIVTASEIQEVDGSRGSGEYAQSRYQGAKSVSGKPGLSDSPTSETWRTW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /evidence-not_experimental
/product="T7N9.9"
/db_xref="PID:92213589"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(join(38404. .38499,38806. .38953,39043. .39188
39284. .39498.39579. .39756,39845. .40010,40104. .40453))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VYCGSGFTYAVKRKQELSPTSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  50053,51910.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ESTS
                                       gb|AA394730"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1910. .52533))
dbj|C22029, gb|T46021, and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb|T44556, gb|U74100,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .44287,44375. .45248;
```

CDS

```
GSGSDDVSSSFADALPRRMYVGGSERAMVVGEEERADPHRHEXDGRVQLRLDER
KMREFKSVSELFVNESFFDNGGFSDEFSLFKTAKHAISMGRKMMDGLDSGLIKPDKA
PVKTRIEKCPDMYSVSESEFVNRSRILVLPGGLTIGSGITVVATPHWAHVEKDGRVQL
MVSQFMMELQGLKAVDGEDPRILHFNPRIKGDWSGRVIEQNGCYRMOWSGLACDG
RESSDDEEYGLDFFDGEVKCERWKRDDDDGGNNGDDFDESKKTWWLNRLMGRRKKWIT
HDWDYPFAEGKLFVTILRAGMECYHISVVGRHITSFPXRFGFVLEDATGLAVKGNIDV
HSVYAASLPSTNPSFAPOKHLEMQRIWAARPSLPOKPVELFIGILSAGNIFAERMAVRK
SWMQOKLVRSSKVVARFFVALHARKEVNVDLKKEAEXFGDIVIVYMDHYDLVYLKTV
AICEYGVNTVAAKYVNKCDDDTFVRUDAVIGEAEXYKGRESLYIGNINFNHKPLRTGK
WAVTREEMPERYYPFYANGPGVILSYDVAKFIVDDFEQKRLLFKMEDVSMGMWYEKF
JOIN (67041. . 67367,67700. . 68056)
/note="similar to Bronze-2 protein; similar to ESTs
gb|H36491, gb|H36232, gb|H37163, gb|AA389825, gb|H37163,
emb|226546"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /Gb_xref="PII:2213596"
/CEANT-MANNDYMILIGCSDDPFSIRPRVALHLKSIKYEYLEEPDDDLGE
KSOLLLKSNPIHKKTPVLHGDLAICESLNIVQYLDEAWSDDSILPSNAVDRASAAF
WAQYIDDKYKQFEDSLHALFCCISKLVKSKYWCLKQCFEAANALTGANNDEERIAAF
GKLTECLAILEETFQKSSKGLGFFGGETIGYLDIACAALLGPISVIEMFSADKFVREE
TTPGLIQWAVREFAHEAVRPYMPTVEEYTELVKQRIEEGFKNRFKSKVSTSTYFF
join(71067. 71225,71312. 71410,71569. 71670,71750. 7189
72009. 72103,72210. 72339,72415. 72519,72624. 72730,7209. 72837,72941. 73030,73120. 73204,73290. 73354,
AVYEYARGNYEKALELLGSEFNAIGYKIVGASDEQIDVFNEMWCQLLLKTGQSSTAKE
                                                                  MSKVEEIYDHHIWKELEKDDAVPPEVYLNALGLLIRLDVRDALDGFEDRLKNLAVRLT
                                                                                                             EDAWAHHCLCHVLQHECRFKEAVEFMEALAGTWPSCSSFMYTHNWWHVALCYLEGGSP
                                                                                                                                        /evidence=not_experimental
/product="77N9.17"
/product="7TN9.17"
/db_xref="PID:92213597"
/translation="%KVLSYCRKRKVILEAPLYDKDCVLGSILAAHFLSSSDPSRANS
YUBAAASNLEQSTPYEKAVYEAVTYLISEDRDDDLAFEMHTKLLKRFFRDLASLKRAQ
YUBAAASNLEQSTPYEKAVYEAVTYLISEDRDDDLAFEMHTKLLKRFFRDLASLKRAQ
LLSFYMGQPDPFLGLYQQVLDANQEESYIHGLLAFPLLELGBMEEAAAASRKGYEINK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence-not_experimental
/product="77N9.15"
/db_xref="pID:92213595"
/translation="MAQNDTVKLIGSWSSPYSLRARVALHLKSVKYEYLDEPDVLKEK
SELLLKSNPIHKKVPVLLHGDLSISESLNVVQYVDEAWPSVPSILPSDAYDBASARFW
AQYIDKCFAAVDAVVGAKDDEGKMAAVGKLMECLAILEETFQKSSKGLGFFGGETIG
YLDIACSALLGPISVIEAFSGVKFLRQETTPGLIKWAERFRAHEAVKPYMPTVEEVVA
                               NQANWYLEWHLDILIVWALAKVGETSRAHELLEGLKFRLSKKNKKKQQVMQKGIQLGE
                                                                                                                                                                                                                                                                                                                                                                                                              /note="unknown; similar to ESTs gb|T88591 and gb|AA394730"
                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /evidence=not_experimental
/product="T7N9.16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="similar to Bronze-2 protein; similar to ESTs
gb|H76491, gb|H36232, gb|H37163, gb|AA389825, gb|H37163,
emb|Z26546"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               join(69317.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              $AGKKAKĀLESSYFK$A"
join(62848. .63715,63803. .64056,64127. .64417,64491. .64619,
64694. .64867,64960. .65067,65160. .65369)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ytranslation-"Mrstplomiallpltliltrekkvileadnydndcvlanilaah
YLSspdvrarsyalaaesrlokatiyekaveravsyllsenhoddvalelikk
FPKDLSWKRYETLCSWGRBIDISLPLFRKILPONEGOVYVNGMLAFCLIELGHLREA
EEAARKGCEINENDSWAHHALCHYLQTECRFKBAVKFMEEHSDSWDSCSLERSHNWW
HVAVCYLEGGSHISKVEEVYDHQMWKELEKDDAVARDVYTDALGLLLRLDTRCKLDDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="PID:g2213594"
/translation="MKKSKLDNSSSQIREGLYQFLLYVLLFYFLCMSFBIPFIFRTGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /evidence=not_experimental
/product="T7N9.14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FODRLEKLADSLTDKAMWYODWLFDITTIWALSKVEKTSLAHELLEGLKSRTSANNPK
KOKLMOKAIULAEAVYEYGKONYEIALELLGLDFDAANYKVIGGSGLOMDVFNEIWYK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LLLLNGKSSTATNSAFTTPEPAAIEVLEKVTKQRDGAPFLWRLLEESYSMEGKEKAGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /evidence=not_experimental
/product="T7N9.13"
/db_xref="PID:g2213593"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .69699,69740.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .70175)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .71893,
```

CDS

KIDESLERA IEDSASVILLETINYANUS MECKAMILYANIA NATERANIAYANA ANA DAMBASUKA INTERNATIONAL KIDESLERA IEDSASVILLETINYANUS MEKOLDELALLODLESSIKERMIP IFYGYNPE DYRKOSGEFRKDFEEKAKSFDEET I QRWKRAMILYGII I GYYCTAKTYGDDINEGII IRE KYDMIDLYVKKYVAAVRRPELYADYTYGLESS I KDLMKLEYTESSGI QYMGLYGM GGIGKTTLAKAFYKKI I YVENHRRVFI ESSYRGKSSODGLVNLQKTLI KELFRLYFE GGIGKTLAKAFYKKI I YVENHRRVFI ESSYRGKSSODGLVNLQKTLI KELFRLYFE EDVSIGLEK KI KENVHEKKI I VVLDDVDHIDQVBALVGETSWYCEGSLI VI TFROSEIL SKLSVNQOY EVKCLTEPQALKLESFYSLRKERPTGGLLELSKKI AEVTGLLPLAVKY FGSHFYDKDEILWERGYCLTEPQALKLESFYSLRKERPTGGLVANLOGTSWYCEGSLI VI TFROSEIL SKLSVNQOY EVKCLTEPQALKLESFYSLRKERPTGGLVANLOGT ANA KYPE SKLSVNQOY EVKCLTEPQALKLESFYSLRKERPTGGLVANLOGT ANA KYPE SKLSVNQOY ELFKKI KI VLD PKSLAKKLER PADHTADE I FSSNLRNNPGI Y SVENYLKKKLYRPALEKLKI LOGTAL SKLSTAKKLOK I FLDI ACLEIKMID I TKEEVVDI I KGCGINAKCALVLOK SI I GI VLD FNKKFARDHTADE I FSSNLRNNPGI Y SVENYLKKKLVVNLRGCHGL KARVLOK BARKKLALLOJ INNVELEGDLKLIPSEL KWAQWKGFFLENLEPDILLSROLGVLDLSSGVRAVKTALOJ INNVELEGDLKLIPSEL KWAQWKGFFLENLEPDILSROLGVLDLSSGVRAVKTALLOJ INNVELEGDLKLIPSEL KWAQWKGFFLENLEFDILSROLGVLDLSSGVRAVKTALOJ INNTERCSLSTELGOV SGLK CLEKKFFLESOLSTI I FVESFAMKKLALLOJ INNKELEGDLKLIPSEL KWAQWKGFFLENLEFDILSROLGVLDATA ISNLFYSI FET I KKALFER FLAGCSILSKLIPDLEK LOGLALD GERGKATTA SENLFYSI GELKELGVES I GGLNSLLOJ LOGLAL KKFLERLY SI GRUNDLEK LOGLAL SULLAVLOG LI SESPEKTEV PVENSTAKLER LARGET LARGE PERGANSILKUM KRALSKALSKI SESPREFYBYPNSFSKLLKLEELDAGSWRI SGKI I PDDLEKKSLK KKALFKTI GKNDTLYSLNLANGFSLESV SDLIKKLANGFSLESV STANKKRLSKASIK KALFKTLYMTG KORNYSLAVKRALSKASIK KALFKTLYNTG KORNYSLAVKKRLSKASIK KALFKTLYNTG KORNYSLAVKRALSKASIK KALFKTLANGFT GADAN KALFKTLYNTG KORNYSLAVKRALSKASIK KALFKTLANGFT GADAN KALFKTLANGFT KORNYSLAVKRALSKASIK KALFKTLANGFT KORNYSLAVKANIK KALF

/translation="MMKTGAVVSNPRSRVKWDAFLSFQRDTSHNFTDRLYEALVKEEL RVWNDDLERVDHDHDHELRPSLVEAIEDSVAFVVVLSPNYANSHLRLEELAKLODLKC LMVPITYKVEPREVKEQNGPPEKDFEEHSKRFGEEKIQRWKGAMTTVGNISGFICGYE IQLEMETGVVPNRLKYSVFLSFRGFDTRTNFCERLYIALNEKQNVRVFRDNEGMEKGD

/evidence=not_experimental /product="T7N9.19" /db_xref="PID:g2213599"

/codon_start=1

VQAQIHKLDHHKCTNTLHLSGVPRTNNDQLHICRYSAFHPLVTMLKDGYTIQVIKRNP PIKQGVELKNHGIHLVYEGDDDLEGRENTLPEAQQTVSQKLANFFSSFEEGEASAKGD

SgS

Sg

```
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                       WINDUERONHELGASLYEARAEDSVALLYVULSBYLKASHKTTERLYEYLYKEUYK
WINDUERONHELGASLYEARAEDSVALLYVULSBYNYAKSHWCLEELAMLCOLKSSIGR
LVLPIFYSEBCMLRKONGPYEMDFEEHSKRFSERIQRRRRALNIIGNIRGFYYRLK
YDFLSFRGADTRDNIGDHLYKALKDKYNFRDNEMBREGDEISSSIKAGMEDSAASV
YUJERNYSGSRWCLDELAMLCKMKSSLDRRILPIFYYDDSHYKKOSDHIKKDFEEHQ
YRFSEEKEKYOEWREALITLYGNLAGYYUDKDSKODDMIELVYKRYLAELSMYPEKYGE
FIVGLESPIKDLIGTLIDTESSSGYOYULGLYGMGGIGKTFLAKAFYNKIYGNFEORAFI
SDLRERSSAENGLYTIOKTLIIKELFRLYDEIEDVSIGLEKIKANPHEKKIIVYLDDYU
HIDQVHALVGETRWYOGGTLIYITTROSEILSKLSVNOQYEVKCLTEPQALKLESYNS
LODYLELSFRKSLDDEEKKYFLDIACLFIKMEIKKDYVLYLKGCGINAEAALSYLROK
SLYKILANDTIWMHDQIRDMGGMYLKESREEDFGLRSRLWDRGEIMTULNMKGTSSI
LODYLELSFRKSLDDEEKKYFLDIACLFIKMEIKKDYVVLKGCGINAEAALSYLROK
SLYKILANDTIWMHDQIRDMGGMYLKESREEDFGLRSRLWDRGEIMTULNMKKGTSSI
FRYTDFKKKFARDFTADEIYGRNLKHNBGIYSVFNYLKKLVRFPAEEKPKSEITI
PUSSFAPMTKLILDIRNCTSLESHLYDVSGLKLLEKLFLGGCSDLSVLPENIGAMTSL
KELLLDGTAIKNUPDENIKVYLLRGCHSLEAIPDLSKLKLYPEDGTLARGLSYLD
FRSYGNLRKIIHLDFRCKLSEFLYDVSGLKLLEKLFINGSAVEELPLKFSSLPSL
KELLLDGTAIKNUPELEGNIKLLPEEIKMICKELFINGSAVEELPLKFSSLPSL
KELLLDGTAIKNUPELSINLEKSLKGLEKLYELRMSKCHLEKLYLDGTALKN
LPSSIGDLKNLODLHIVCTSLSKIFDSINELKSLKKLFINGSAVEELPLKFSSLPSL
KELLDGTAIKONDSIGRUSNLAVLEELSKIKLFINGSAVEELPLKFSSLPSL
KELLDGTAIKONDSIGRUSNLAVLEDEIGALKLLERMSKCKMLKRLPESSLPSL
KELLDGTAIKONDSIGRUSNLAVLEDEIGALKLILTELANSKCKMLKRLPESSLPSL
KELLDGTAIKONDSIGRUSNLAVLEDEIGALKLILTALMSTERSLNOKFL
KELLDGTAIKSLESSONDGTSEEPFYVYNS
SLANDCRELDLKSSIGRUSNLAVLEMLKKPLFRISSSNVGTSEEPFYVYNS
SLANDCRELDANGSWRISCHLENGLEMLKTLITULNITACAKVYDLDGLS
LKDCRELKRLPENGCKILSNLAVLANCESSLESUNGTSEEPFYVYNS
LKDCRELKSLANDLOCHSLANGKALKALDGLSCHILDGLS
LKDCRELKRLPENGCKILSNLAVLANCESSLSSUNGTSEEPFYVYNS
LKDCRELKRLPENGCKILSNLAVLANCESSLSSUNGTSEEPFYVYNS
LKDCRELKRLPENGCKILSNLAVLANCESSLSSUNGTSEEPFYSYPNS
LKDCRELKRLPENGCKILSNLAVLANCESSLSSUNGTSEEPFYSYPNS
LKDCRELKRLPENGCKILSNLAVLANCESSLSSUNGTSEEPFYSYPNS
LKDCRELKRLPENGCKILSNLAVLANCESSLSSUNGTSEEPFYSYPNS
LKDCRELKRLPENGCKTLANGKTLANGTSLSSUNGTSEEPFYSYPNS
LKDCRELKRIPTSTAND
HLTALKRLYMTGCNSNYSLAVKKRLSKASLKYMRNLSLFGNRYDDWFSGOPVTFSAQP
NRELRGVIIAVVVALMDETEDDDYQLPDVMEVQAQIHKLDHHKCTNTLHLSGVPRTNN
DQLHICRYSAFHPLVTMLKDGYTIQVIKRNPPIKQGVELKMHGIHLVYEGDDDLEGRE
NTLPETQQTVSQKLANFFSSFEEEEETISESESTVI
join(81318. .81794,82755. .83236,83326. .84475,84562. .849:
85047. .86648,86729. .87277)
/note="similar to disease resistance kinase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note-"similarity to valyl tRNA synthetase; predicted non-functional because of reading frame shift" join(75036. 75508,76209. 76649,76746. .77862,77947. .78357,78445. .80043,80124. .80678)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref-"PID:92213598"
/translation="MVKTGDVSDQRSRLEWDVFLSFQRDARHKFTERLYEVLVKEQVR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VIRERIKARDGIPFMWRLLEKSYSMEGNAEAESSARERAKKLESCYF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="similar to disease resistance kinase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             product-"T7N9.18"
                                                                                                                                  .83236,83326. .84475,84562. .84972,
```

```
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /translation="MSVHGRFPASPPISLSPSSSSTSPSSQSPSTPPDLKQRVIACLN KLADRETLALASAELDSIARRITHDSFSPFLKCIHNTDSSVKSPVRKQCVALLSVLSR YHGDSLTPHLAKMVSTVIRRLRDPDSSVRSACAVATADMSAHVTRQPFASVAKPLIET LIQEGDSNLQIGAALCLAASVDAATDDESEQLRKSLDRIGKLLKSDGFKAKAALLSAV GSIITAGGAGTKPVLDWLVPVLIEFLSSEDWAARKSAAEALGKVATAEDLASQVKKTC TTALESRRFDKYKSVRETMNRALNLWKEVSTDDEASLSPSRSSTDDGNIGCFSSVTRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /evidence-not_experimental
/product="77N9.21"
/db_xref="pID:92213601"
/tb_xref="pID:92213601"
/translation="MYBYENGKKRKVRNKQQVKVQFL8QRYLILCECCFFVLLFFLSS
DRISTLSVRSDSLRVFTLSVLSSSMDSFHRGRFPPLSVEDRVQFVDHLLLILSH
GIGKGEKNLYCVYRGVKEETLYLPSISSDEFDEFRSIYRCPNN.PLNYSSSVDLQFRGD
                                                                                                                                                                                                                                                                                                     /db_xref="PID:92213603"
/translation="MAGEGSKPKATVDDAYAYIRTVKSTFHNDPDKYDDFMAIMKNFK
/translation="MAGEGSKPKATVDDAYAYIRTVKSTFHNDPDKYDDFMAIMKNFK
ARKIDRNTCIEEVKELLKGHRDLISGFNAFLPKCLEIADWYNIEVLEAELQALLMAMQ
HTWSKGYRKIIFEGDNRTVESLLNGNTRNFELHNLIEIQHWRKKFSNAIIKWSFRST
MKAADRLAKGELENNVTFVSHSTR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SDDGDSVKNCKDDVEBSKKDSBELSLIREQLALIENQQSSLLDLLQKFWGTSQSGIQS
LESRVGGLEMALDEISCDLAVSNGRVPRNSSGCAGDSCSKLPGTESPKFWRKTEER
PRNRNTANEMAAYDQGMRESTDTNMGGRGGSVFQKRSRRDQFDCMHTTLQKFTTR"
join(105265...105404,105539...105663,106614...106903)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EIELLSSENYNVSRHVWPWIKTQEAGFSHCAVRAKEECNWVGFFDVDEFYYFPTHRSQ
GLPSKNALKSLVSNYTSWDLVGEIRTDCHSYGPSGLTSVPSQGVTVGYTCRQANPERH
KSIIRPELLISSLLNEVHHFQLKEGVGHMSLVESVAVVNHYKYQVWDTFKAKFYRRVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(88382. .90187)
/note-"similar to ESTs
/note-"similar to ESTs
gb|T20510, gb|T45307, gb|R30033, gb|Z26201, gb|AA394682. .
gb|Z26201, and gb|T43096"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /evidence=not_experimental
/product="T7N9.22"
/db_xref="PID:g2213602"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LVKKKMKKQSRRVHNWEKVGYEAVIDGDTVVVFVKGLTRRPHKESDPSYYKCQFEIEN
SEEKEVTQAIAAAQEVVRCGLPESLKLNPEMMFRVSVIHIDPRGRTTPALPSVARIYG
SDSIEKKEKKSGVKHELCVCTMLWNQAPFLREWIMYHSWLGVERWFIYDNNSDDGIQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="unknown, similar to ESTs emb|F14134, gb|T21189,
gb|T43096, gb|T1189, gb|Z37659"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PTMIQVYESLKNMADKHGVSEHYDEFPLVFNKQEA" complement(91271. .92998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AVLDWPTRRAIGVGAAKGLAWLHHGCQPPYLHQFISSNVILLDDDFDARITDYGLAKL
VGSRDSNDSSFNNGDLGELGYVAPEYSSTMVASLKGDVYGFGIVLLELVTGQKPLSVI
NGVEGFKGSLVDWVSQYLGTGRSKDAIDRSICDKGHDEEILQFLKIACSCVVSRPKER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IPSQLSRLDRLRRLSLAGNDLSGTIPSELARFGGDDFSGNNGLCGKPLSRCGALNGRN
LSIIIVAGVLGAVGSLCVGLVIFWWFFIREGSRKKKGYGAGKSKDDSDWIGLLRSHKL
VQVTLFQKPIVKIKLGDLMAATNNFSSGNIDVSSRTGVSYKADLPDGSALAVKRLSAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /translation="MKKIFITLLWLLFISSFLCSSSSAEDDVLCLQGLKNSLIDPSSR
LSSWSFPNSSASSICKLTGVSCWNEKENRIISLQLQSWQLAGEIPESLKLCRSLQSLD
LSGNDLSGSIPSQICSWLPYLVTLDLSGNKLGGSIPTQIVECKFLNALILSDNKLSGS
                                                                                                                                                                                                                                     join(107696.
108464. .108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STIDVGLKSARPKKVTPIMKRSPSLPVNRSYAATRQKENLPKRNQGNMTMLVEEASSV
DNKGPHFTPVKKSSEETEEKANSGGPDIIKHTISEKSREDSKVSSFGGLRSGSRVAPC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="unknown; similar to EST gb|N96069"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LPWQRQQQE'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYVVDWQENQNQGSKDRAPGLGTEAIEPPDWKRRFCEVWDTGLKDLVMSNFADQVTG)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GFGEKQFRSEMNKLGELRHPNLVPLLGYCVVEDERLLVYKHMVNGTLFSQLHNGGLCD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
/evidence=not_experimental
/product="T7N9.20"
/db_xref="PID:g2213600"
                                                                        /evidence=not_experimental
/product="T7N9.24"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /evidence=not_experimental
/product="T7N9.23"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
translation="MVERRVQVEPTLSDAHSYITAVKEAFHDEPTKYEEFIKLMNDIR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       lement(join(97226. .97606,97721. .98247,98334. .98433,6. .99376))
                                                                                                                                                                                                                                         .108535)
                                                                                                                                                                                                                                                                         .107835,107952. .108198,108274.
```

```
δÃ
                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                      δÃ
                                             Š
                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
Db 109448 ATTTAAATTGTAAAGCTTTACAAGCATCTGTGAAA 109414
                                                                                                   Db 109688 ACAAACCAGAAAATTTACTATGGGTATAAGGTTCACCACTAGAACTTGAATGATTTTAAT 109629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity Matches 136; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local :
                                                                                                                                                                                                   109628 TTGAGCTGTATAGGTCTTTATATATATATAAAAAAAAATAGACCTTTTGCAATTGTATCA 109569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SdC
                                                                                                                                                                                                                                                                                                                                   722 ACCAAATGTGATGCATGGTGGATCCAGAAAAACAAAAAGTAGGATACTTACAAT----CCA 777
                                                                                                                                                                                                                                                                                                                                                                                                                                                         662 ACACAGCCAACATTTTAGGAACTTTCTAGATTATAGCATAAGGACATGTAATTTTTGAAG 721
                                                                                                                                                                                                                                                      778 TAACATCCATATGACTGAACACTTGTATGTGTTTGTTAAATATTCGAATGCATGTAGATT 837
                                                ATGGAGACAGGTCAACCAAAGAGGGAGCTAGGCAA 932
                                                                                                                                                TGTTAAATGTGTGTGTATAGTAACACTGAAGAACTAAAAAATGCAATTTAGGTAATCTTAC 897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     35883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="PID:g2213605"
/translation="MYGGGSKHYGEGSKPRATKDDAYAYLRAVRAKFHNDSKKYDDFV/translation="MYGGGSKHYGEDLEGKHYDLISGFNAFLPKCLEIKNYYFGAGEDLEVVAYMINFKARRIDRDGCIKEVEQLIKGHRDLISGFNAFLPKCLEIKNYYFGAGEDLEVVYTAKKKLLARSYTKRSSSSSSSSYVFLFRSCEII"
19310 c 20289 g 35908 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DHGVUKASGIAKLTELIKGRPRLLRGLSFFFPQVNRDIHHEAKRTIILKDKATIPPEA
AYRGAKSTYTKIKQIEDDWENMMLKTRFRSLDTHVVESFLKIMIMYDEGKKSEKEV
QEEVVDLLYYHEDLIDKFFRLFNMRK"

join(110027. .110187,110323. .110453,110972. .111093)
/note="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /evidence=not_experimental
/product="T7N9.25"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 41; DB 38; Length 111390;
Pred. No: 3.9;
0; Mismatches 135; Indels 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
```

Search completed: May 3, 1999, 22:21:25 Job time: 2813 sec

```
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGCTTCCCACCAGCAAAGA.....GTTNCCTNTNTCTNAAGGAC 1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1999, 21:33:44 ; Search time 46.99 Seconds
(without alignments)
5088.631 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Compugen Ltd
                   Human brain Expres
The mouse beta-act
Sequence encoding
Dictyostelium plas
                                                                   Human secreted pro
Human gene signatu
Rat SCF genomic DN
Chloroplast promot
Bacillus thuringie
                                                                                                                    Chicken nov gene f
Aphrodisine. DNA a
Hamster Aphrodisin
Tobacco calcium/ca
Methanococcus jann
                                                                                                                                                                                                                                                    Trypanosoma cruzi
Usp45 gene. Lactoc
MSP gene in pUCRS
Connective tissue
Human connective t
                                                                                                                                                                                Sequence encoding Human connective t Neuronal alpha-bun Bacillus thuringie Bacillus thuringie P.falciparum GBP13
                                                           Dictyostelium
                                                                                                                                                                         Murine TRAF5 cDNA
                                                                                                                                                                                                                                             Connective tissue
                                                                                                                                                                                                                                                                                                        Human connective t
                                                                                                                                                                                                                                                                                                                  Human connective
                                                                                                                                                                                                                                                                                                                             Connective tissue
                                                                                                                                                                                                                                                                                                                                      Connective tissue
                                                                                                                                                                                                                                                                                                                                                                              Chicken nov gene PolydA detection
                                                                                                                                                                                                                                                                                                                                                                                                            Murine Fisp12
                                                                                                                                                                                                                                                                                                                                                                     Chicken nov
                                                                                                                                                                                                                                                                                                                                                                                                   Gene for
                                                                                                                                                                                                                                                                                                                                                                                                                      Human G
                                                                                                                                                                                                                                                                                                                                                                                                                                Pineal
                                                                                                                                                                                                                                                                                                                                                                                                                                        Vascular IBP-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Description
                                                                                                                                                                                                                                                                                                                                               immitis VA5 nuc
immitis venom a
                                                                                                                                                                                                                                                                                                                                                                                                                                grand speci
                                                                                                                                                                                                                                                                                                                                                                                                                      protein
                                                                                                                                                                                                                                                                                                                                                                                                beta-IG-M
          prote
                                                           plas
                                                                                                                                                                                                                                                                                                                                                                                                            CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                     ga
         W09617931-A1.
13-JUN-1996.
09-DEC-1994; U14388.
09-DEC-1994; WO-U14388.
(HUMA-) HUMAN GENOME SCI I
Hastings GA, Rosen CA;
WPI; 96-287176/29.
P-PSDB; R98994.
Human vascular insulin-like growth factor binding protein-like growth factor, and its nucleic acid sequence and (ant)agonists - used, e.g. to treat muscle wasting diseases or aid implant fixation, or limit excess connective tissue prodn. during wound healing.
Claim 1; Page 42-43; 61pp; English.
A cDNA clone (T34991) codes for human vascular insulin-like growth factor binding protein-like growth factor (R98994), or VIGF, a protein structurally related to the IBP and CCN
                                                                                                                                                                                                    misc_difference
                                                                                                                                                                                                                                            misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      44
                                                                                                                                                                                                                                                                                  misc_difference
                                                                                                                                                                                                                                                                                                                          misc_difference
                                                                                                                                                                                                                                                                                                                                                                  misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                         misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Vascular IBP-like growth factor cDNA.
Vascular IBF-like growth factor; VIGF;
Insulin-like growth factor binding protein; agonist; antagonist;
muscle wastage; osteoporosis; implant fixation; wound healing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  T34991 standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              signal_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ното
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              therapy; diagnosis; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  06-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             T34991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     32
31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
o :
                                                                                                                                                                                               /note= j
/note= "base 1261 i
specification"
e 1265
                                                                                                                                                                                                                                                                               /"cag" h
/note= "base 1255 i
specification"
e 1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                              specification"
1225
                                                                                                                                                                                                                                          /note= "base 1259
specification"
1261
                                                                                                                                                                                                                                                                                                                                                                                                      pase 1096 specification"
                                                                                                                                                                / HOTE Thase 1265 specification"
                                                                                                                                                                                                                                                                                                                                                                                                                                            specification"
1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .
.
.
.
                                                                                                                                                                                                                                                                                                                        specification"
1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag=
653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag= b
121. .609
                                                                                                                                                                                         /*tag=
                                                                                                                                                                                                                                                                                                                                            /"tag= g
/note= "base
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /*tag-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4854
1133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .120
                                                                                                                                                                                                                                                                                                                                                                                                                        e
"base
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              മ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   بر سر
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ВÞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q11538
T74986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                              Ę,
                                                                                                                                                                                                                     ĺS
                                                                                                                                                                                                                                                             is
                                                                                                                                                                                                                                                                                                    S,
                                                                                                                                                                                                                                                                                                                                           is
                                                                                                                                                                                                                                                                                                                                                                                   is
                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 given
                                                                                                                                                                             given
                                                                                                                                                                                                                    given
                                                                                                                                                                                                                                                            given
                                                                                                                                                                                                                                                                                                   given
                                                                                                                                                                                                                                                                                                                                           given
                                                                                                                                                                                                                                                                                                                                                                                   given
                                                                                                                                                                                                                                                                                                                                                                                                                        given
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 as
                                                                                                                                                                             as
                                                                                                                                                                                                                     as
                                                                                                                                                                                                                                                            as
                                                                                                                                                                                                                                                                                                   as
                                                                                                                                                                                                                                                                                                                                           as
                                                                                                                                                                                                                                                                                                                                                                                   as
                                                                                                                                                                                                                                                                                                                                                                                                                           as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                4
                                                                                                                                                                            ¤
                                                                                                                                                                                                                    Ħ
                                                                                                                                                                                                                                                           Ħ
                                                                                                                                                                                                                                                                                                   Ħ
                                                                                                                                                                                                                                                                                                                                          4
                                                                                                                                                                                                                                                                                                                                                                                   ם
                                                                                                                                                                                                                                                                                                                                                                                                                          н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                in
                                                                                                                                                                             in
                                                                                                                                                                                                                    ij
                                                                                                                                                                                                                                                           'n
                                                                                                                                                                                                                                                                                                   'n
                                                                                                                                                                                                                                                                                                                                          'n
                                                                                                                                                                                                                                                                                                                                                                                   ä
                                                                                                                                                                                                                                                                                                                                                                                                                          'n
                                                                                                                                                                            the
                                                                                                                                                                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                                                            the
                                                                                                                                                                                                                                                                                                   the
                                                                                                                                                                                                                                                                                                                                           the
                                                                                                                                                                                                                                                                                                                                                                                   the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rat Stem Cell Fact
Human HLA DR alpha
```

Result

Match Query

Length DB

Ħ

SUMMARIES

იი

1263. 37. Score

22.22.0 2.00.0 2.00.0 2.00.0 2.00.0

T34991 T47647 T47675 T94700

Database Searched: Scoring table: Sequence: Title:

N_Geneseq_34:*

240622 seqs, 94065609

residues

IDENTITY_NUC

Perfect score:

US-09-037-460-1 1271

OM nucleic

.

nucleic search, using sw model

GenCore version Copyright (c) 1993 - 1998

4.5

on:

Мау 3,

o o

N60472 Q11710 T62654

a

713 1723 16550 1847 102 2414 552 2414 552 2414 1046 5852 4852 4852 1892 1895 1895

Q49210 T91745 V21211 V59649 T26575 T04895 N60612 V30312 Q11710 Q60816

000

ററ

T88022 Q36032 Q48773 Q27886

a O

Q14501 Q13830 V65380 T58534 T59618 Q83532 V29260 T59196 V30303

o

T69172

T45360

α

```
ρy
                                                     δÃ
                                                                            В
                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q.
밁
                                       밁
                                                                                                                                                                             Ş
                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                           멍
                                                                                                                                                                                                                                                                                                                                         Ωy
                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                       δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                 日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                88888888
                                                                                                                     밁
                                                                                                                                     δÃ
                                                                                                                                                             닭
                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             families. It was discovered in a cDNA library derived from hum umbilical vein endothellal cells. The cDNA can be used for prodn. of recombinant VIGF, e.g. by expression in E. coll, CHO or insect host cells. It is also useful therapeutically e.g. to treat muscle wasting diseases or osteoporosis, or to design probes for the detection of diseases associated with under-or over-expression of VIGF.

Sequence 1271 BP; 360 A; 246 C; 337 G; 320 T;
                                                                                                                                                                                                                                            481
                                       781
                                                          781
                                                                              721
                                                                                                                       661
                                                                                                                                         661
                                                                                                                                                               601
                                                                                                                                                                                                     541
                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                  721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           y Match
Local Similarity
hes 1270; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ы
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGCTTCCCACCAGCAAAGACCACGACTGGAGAGCCGAGCCGGAGCAGCTGGGAAACATG
                                   GTGAGAGAAGTTGTGAAAGAGAATGCTGCCGGGTCTCCCGTAATGAGGAAATGGTTA
                                                                                                                                                                                                                                           TGTCCCTACGGCACCTTCGGGATGGATTGCAGAGAGACCTGCAACTGCCAGTCAGGCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAAATGTGTGTGTATAGTAACACTGAAGAACTAAAAATGCAATTTAGGTAATCTTACATG
                                                                                       GACCAAATGTGATGCATGGTGGATCCAGAAAACAAAAAGTAGGATACTTACAATCCATAA
                                                                                                                               CACACAGCCAACATTITAGGAACTTTCTAGATTATAGCATAAGGACATGTAATTTTTGAA
                                                                                                                                                             AGGTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGAGTTTGGTATCTGCAAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                   GGAGAAACTTGCTACCGCACAGTCTCAGGCATGGATGGCATGAAGTGTGGCCCGGGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCCGAGTGTGCGCTGCAGGGCGG
                                                                              GACCAAATGTGATGCATGGTGGATCCAGAAAACAAAAAGTAGGATACTTACAATCCATAA
                                                                                                                      CACACAGCCAACATTTTAGGAACTTTCTAGATTATAGCATAAGGACATGTAATTTTTGAA
                                                                                                                                                                                                     GTGAGAGAAGAAGTTGTGAAAGAGAATGCTGCCGGGTCTCCCGTAATGAGGAAATGGTTA
                                                                                                                                                                                                                                                                                                                                                                   AGGTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGAGTTTTGGTATCTGCAAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                          GGAGAAACTTGCTACCGCACAGTCTCAGGCATGGATGGCATGAAGTGTGGCCCGGGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCTGCCGAGTGTGCGCTGCAGGGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 1263.2;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                         720
                                                                                                                                                             660
                                                                                                                                                                                 660
                                                                                                                                                                                                     600
                                                                                                                                                                                                                        600
                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                             780
                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
PT Pload gland specific gene-1 and corresponding protein - used in the PT treatment of pineal tumours and alleviation of side effect, e.g. PT precocious puberty, hydrocephalus etc.

PS Claim 1; Page 42; 56pp; English.

CC The present sequence represents a novel isolated polynucleotide complete the protein gland specific gene-1 (PGSG-1), which was derived from a human complete the protein gland tissue cDNA library. The PGSG-1 polypeptide may be used to treat pineal tumours and thereby treat the side effects, including complete the puberty, hydrocephalus, papilledema and other signs of complete the constant pressure. PGSG-1 and its protein may be used to regulate biological rhythms, in particular circadian rhythms, and to regulate pituitary secretion of hormones which regulate the onset of completely, e.g. luteinising hormone, follicular stimulating hormone (FSH) cand growth hormone (GH) released by the pituitary. The (ant)agonists which act against the protein may also be used to regulate the consection of these hormones. The PGSG-1 gene and proteins may also be used to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멂
                                                                                                                                                                                                                                                              He WW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17-SEP-1997 (first entry)
Pineal gland specific gene-1 encoding cDNA.
PGSG-1; pineal gland; epiphysis cerebri; tumour; precocious phydrocephalus; papilledema; intracranial pressure; circadian pituitary secretion; luteinising hormone; growth hormone; follicular stimulating hormone; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1021
                                                                                                                                                                                                                                                P-PSDB; W09405
                                                                                                                                                                                                                                                                                                     W09639158-A1.
12-DEC-1996.
05-JUN-1995; U07067.
05-JUN-1995; WO-U07067
                                                                                                                                                                                                                                                                                                                                                                                       mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1021
                                                                                                                                                                                                                                                            (HUMA-) HUMAN GENOME
He WW, Rosen CA;
WPI; 97-042840/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            T47647
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       901
                                                                                                                                                                                                                                                                                                                                                                                                                                ignal_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCTAGAATTTAATTRIGCTTTTTTTTTTTTTTTTGGGCTTTGGGAAAAGTCAAAATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGACAGGTCAACCAAAGAGGGAGCTAGGCAAAGCTGAAGACCGCAGTGAGTCAAATTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NTCTNAAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCTTTGACTTTGATGTACATTAATGTTGGGATATGGAATGAAGACTTAAGAGCAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NTCTNAAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCTTTGACTTTGATGTACATTAATGTTGGGATATGGAATGAAGACTTAAGAGCAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         standard;
                                                                                                                                                                                                                                                                                                                                                               /note= "putative l
100. 1071
/*tag= h
                                                                                                                                                                                                                                                                                                                                                         /*tag= b
/product=
                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers 37. .99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDNA;
                                                                                                                                                                                                                                                                                          SCI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1198
                                                                                                                                                                                                                                                                                                                                                            Pineal_gland_specific_gene-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВÞ
                                                                                                                                                                                                                                                                                                                                                                                                     leader
                                                                                                                                                                                                                                                                                                                                                                                                    sequence'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1080
```

```
RESULT
T4767
ID 7476
ID 7476
AC T476
AC GPT
Cds
FT 5'ut
FT poly
FT poly
FT poly
FT poly
FT POLY
FT POLY
FT POLY
FT POLY
FT POLY
FT POLY
FT POLY
FT POLY
FT POLY
FT POLY
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cds
FT Cdds
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd
FT Cdd

                                                                   Š
                           밁
                                                                                                                  밁
                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                              New nucleic acid encoding gamma subunits of human G protein - used of screen for agonists and antagonists of G protein interaction to detect mutation(s) in, or altered levels of, the subunits and to screen for agonists and antagonists of G protein interaction to the screen for agonists and antagonists of G protein interaction to the screen for agonists and antagonists of G protein interaction to gamma 1, page 29; 40pp; English.

C CDNA clones (T47669-75) respectively code for human G protein to gamma-2, gamma-3, gamma-4, gamma-5, gamma-7, gamma-10 and gamma-11 to gamma-2, gamma-1, gamma-10 to gamma-11 to sequence to identify expressed sequence tags (EST). By matching the sequences of EST to genes of known structure, the 7 new subunit the deposited as ATCC 97139. The cDNA clone for gamma-11 has been to groduce recombinant gamma subunits in prokaryotic or eukaryotic compositic cells for use in the development of therapeutic and diagnostic cells for use in the development of therapeutic and diagnostic cells for use in human G protein subunit sequences and for composition identification.

Sq. Sequence 654 BP; 231 A; 116 C; 142 G; 165 T;
                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ဒ္ဓင္တ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                          1149 AAAACCCCTGAAGGAAGTAAGATGTTTGAAGCTTATGGAAATTTGAGTAA 1198
                                                                                                             1089 TTTAATTRTGCTTTTTTTTTTTTTTTGGGCTTTGGGAAAAGTCAAAATAAAACAACCAG 1148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (HUMA-) HUMAN GENOME SCI INC.
(SMIK ) SMITHKLINE BEECHAM CORP.
(WEIS-) WEIS CENT RES.
Kunsch CA, Robishaw JD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-MAY-1995; U06406.
22-MAY-1995; WO-U06406.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               polya_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5'utr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human G protein
G protein; signa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  T47675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              T47675 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19-MAY-1997 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   disease
CAATATACTGAAAGAAGTGTCATGCTCAAGTAATGTTCTTATTTCCATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                       TTTTTTTTTTTTTTTTTTTTTTTTTTTTAAGACAAAACTTTATTTGAAGCATCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
                                                                                                                                                                                                            64;
                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mentioned ale 1198 BP;
                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Robishaw JD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  signal transduction;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3.0%;
nilarity 76.7%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /*tag= b
330..654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /*tag=
607. .6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gamma-11 subunit cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cdna;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d above.
300 /
                                                                                                                                                                                                                           2.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g≖ c
.612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 654
                                                                                                                                                                                                  0;
                                                                                                                                                                                                                    Score 36.4; DB 1;
Pred. No. 0.45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 37.6; D
Pred. No. 0.28
0; Mismatches
                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 agonist; antagonist; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                             46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1;
                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>ن</u>
                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1198;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
  545
                                                                                                                                                                                                                                          654;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Η
                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
밁
                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                    Example 2; Page 113-114; 133pp; English.

Chis cDNA clone codes for murine Fispl2 (see W35731), an extracellular matrix signalling molecule (ECM) that exhibits crucial similarity to Cyr61 (see W35730) and which, like Cyr61, influences cell adhesion, proliferation and migration. Creater, Fispl2 polynucleotides can be used for the production compositions are provided that comprise mammalian ECM signalling compositions are provided that comprise mammalian ECM signalling creating with receptors for ECM signalling molecules, peptide fragments, inhibitory peptides capable of interacting with receptors for ECM signalling molecules, and creating with receptors for ECM signalling molecules associated with angiogenesis, chondrogenesis and concogenesis; ex vivo methods for using ECM signalling molecules to prepare blood products are also provided.
                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 52
  EP-495674-A.
22-JUL-1992.
17-JAN-1992;
18-JAN-1991;
                                                                                         Gene for beta-IG-M2.
Transforming growth factor beta; induced; CEF-10; v-src; embryo; fibroblasts; TGF-beta; ss.
                                                                                                                                                                        Q26422
                                                                                                                                               18-JAN-1993
                                                                                                                                                                                                                                  320 GCAGCTGGGAGAACTGTG
                                                                                                                                                                                                                                                                  234
                                                                                                                                                                                                                                                                                          260
                                                                                                                                                                                                                                                                                             174 CAGCCCGCGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCTGCCGAGTGTGCGCTGC 233
                                                                                                                                                                                                                                                                                                                                                                                                    to prepare blood products are also provided. Sequence 2267 BP; 570 A; 568 C; 582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Isolated and purified cysteine rich modulate e.g. haematostasis, induce regeneration etc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Murine Fisp12 CDNA.
Fisp12; cysteine rich protein; mouse; Cyr61; extracellular matrix signalling molecule; cell adhesion; cell migration; cell proliferation; angiogenesis; chrond
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 97-470875/43.
P-PSDB; W35731.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lau LF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-SEP-1997.
14-MAR-1997; U04193.
15-MAR-1996; US-013958.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    W09733995-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  T94700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (MUNI-) MUNIN CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          T94700 standard;
                                                                                                                                                                                                                                                            AGGGCGGGGAGAAACTTG
                                                                                                                                                                                                                                                                            CTGCCCCGCCGGCGTGAGCCTGGTGCTGGACGGCTGCGGCTGCTGCCGCGTCTGCGCCAA 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       musculus.
                                                                                                                                                                    standard; DNA;
                                                                                                                                                                                                                                                                                                                                        l Similarity 66.7
52; Conservative
300429.
US-642991.
                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                 Location/Qualifiers 204. .1247
                                                   /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers 138. .1284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /*tag=
                                                                                                                                                                                                                                                                                                                                                   2.98;
66.78;
                                                                                                                                                                    2330
                                                                                                                                                                                                                                    337
                                                                                                                                                                                                                                                            251
                                                                                                                                                                    ВP
                                                                                                                                                                                                                                                                                                                                    Score 36.4; D
Pred. No. 0.89
0; Mismatches
                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein 61, Cyr61 - useful to wound healing, promote organ
                                                                                                                                                                                                                                                                                                                                                  DB
.89;
                                                                                                                                                                                                                                                                                                                                     26;
                                                                                                                                                                                                                                                                                                                                                            1;
                                                                                                                                                                                                                                                                                                                                                                                                     <u>و</u>
                                                                                                                                                                                                                                                                                                                                                           Length 2267;
                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      chrondrogenesis;
                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                0
```

```
吊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                     PT Nucleotide sequences hybridising to regions of chicken nov gene -
present as probes for detecting complementary sequences to
present as probes for detecting complementary sequences to
present and/or differentiation of tumours
claim 2; page 27; 67pp; French.

The chicken nov gene is stimulated in avian nephroblastoma induced
by avian myeloblastoma virus but not in normal adult kidney. A
claim 2; page 20; 67pp; French.

Chicken embryonic fibroblasts screened with a tumour-derived probe.
Fragment III is derived from the 2nd. exon of the nov gene;
nucleotide sequences which hybridise to Fragment III under stringent
conditions (i.e. 50% formamide, 5 x SCO) are claimed. The claimed
sequences preferably encode a protein with at least 70% homology to
R31600 which is encoded by Fragment III.

Sequence 230 BP; 18 A; 89 C; 97 G; 26 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGF-beta induced gene family - encodes proteins involved in growth and differentiation effects of TGF-beta-1

Tgrowth and differentiation effects of TGF-beta-1

The DNA encoding mouse beta-IG-M2 was obtd. from AKR-2B mouse cells induced with TGF-beta1 and cyclohexamide. Poly RNA extracted from these cells was used to create a cDNA library which was screened using two probes. The probes were prepd. from untreated AKR-2B mRNA and AKR-2B mRNA from cells treated with cyclohexamide and TGF-beta1. Hybridising colonies were isolated and two clones (beta-IG-M1 and beta-IG-M2) were then sequenced. The DNA encodes proteins that have a 80 and 50 percent homology respectively with the CEF-10 protein induced by v-src in chicken embryo fibroblasts. The proteins encoded by TGF-beta induced genes are likely to be involved in mediation of the biological effects of TGF-beta relating to cell growth and differentiation.
Query Match
Best Local S
Matches 53
                                                                                                                                                                                                                                                                                                      25-JUN-1991; FR-007807.
(CNRS ) CENT NAT RECH S
Martinerie C, Perbal B
WPI; 93-036377/04.
                                                                                                                                                                                                                                                                                         P-PSDB; R31600
                                                                                                                                                                                                                                                                                                                                                   25-JUN-1992;
25-JUN-1991;
                                                                                                                                                                                                                                                                                                                                                                                                WO9300430-A.
                                                                                                                                                                                                                                                                                                                                                                                                                               stringent hybridisation;
                                                                                                                                                                                                                                                                                                                                                                                                                                             avian nephroblastoma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chicken nov gene exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q36033 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10-JAN-1992; US-816270.

(BRIM ) BRISTOL-MYERS SQUIBB C

BRUNDER AM, Chinn J, Neubauer

WPI; 92-243508/30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q36033;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P-PSDB; R25565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24-MAY-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAGCTGGGAGAACTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGGGCGGGGAGAACTTG
 Similarity 53; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                               domesticus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
52; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2330 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2.9%;
              2.7%;
                                                                                                                                                                                                                                                                                                                       SCI.
                                                                                                                                                                                                                                                                                                                                                                                                                                    2 fragment ....
avian myeloblastoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 589 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                251
                                                                                                                                                                                                                                                                                                                                                                                                                               SS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 36.4; DI Pred. No. 0.9; O; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         r MG,
Score 34.4; DB Pred. No. 0.96; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 598 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Purchio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   595
                            1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26;
   31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ç,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 2330;
                              Length 230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   548
 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
              This sequence represents a hairpin forming probe of the invention. The probes comprise a segment complementary to the target nucleotide and are capable of forming at least 1 imperfect hairpin. The probes contain at least one acceptor label moiety and at least one donor moiety label which are covalently attached to the nucleotide sequence so that when the hairpins are formed the moietles are in close proximity to allow resonance energy transfer between them. This causes a reduction in the fluoresence of the two fluorophores. The target sequence contains at least 22 nucleotides to ensure specificity and avidity of the probetary thybridisation. The hairpins formed are imperfect hairpins and the intentional base pair mismatches are introduced into the competitive arms such that the specificity sequence will favour binding to the target sequence. Therefore when the probe interacts with the target sequence the competitive arm is displaced, increasing the distance between the fluorophores, resulting in a change in fluorescent emission.
                                                                                                                                                                                                                                                                          or more hairpins
Disclosure; Fig 4; 25pp;
                                                                                                                                                                                                                                                                                                            Nucleic acid probe for use in DNA or RNA hybridisation assays comprises a nucleotide sequence which is capable of forming or
                                                                                                                                                                                                                                                                                                                                            (MAIN-) MAINE MEDICAL CENT
Bagwell BC;
WPI; 94-185245/23.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              stem_loop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PolydA detection probe containing flourophores.
Target sequence; binding ability; hairpin forming; probes; imperfect hairpin; acceptor label moiety; donor moiety lab
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q66926
                                                                                                                                                                                                                                                                                                                                                                                                                                 EP-601889-A.
15-JUN-1994.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          stem_loop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  fluoresence;
competitive a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25-JAN-1995
Polyda detec
                                                                                                                                                                                                                                                                                                                                                                                                10-DEC-1993;
10-DEC-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     modified_base
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  modified_base
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         266926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGGGCGGGGAGAAACTTGCTACC 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGCCCGCGCTGCAAGAGGACAGTGCTCGACGACTGTTGGCTGCTGCTGCTGCTGCTGCTGCTGCAGTGTGCGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGCAGCGCGGCGAGAGCTGCTCCC 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTGCGCCCCGGGAGTGCCCGCCGTGCTGGACGGCTGCCGGCTGCTGGTGTGCGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       standard;
                                                                                                                                                                                                                                                                                                                                                                                                 310007.
US-990298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                lrpin; acceptor label moiety; donor moiety label;
fluorophores; specificity; base pair mismatches;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note= "Three-site aminoalkyl-derivatised
oligonucleotide with a 6-carbon linker arm
attached to an additional fluorophore molecule"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          space
43. .8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note= "Three-site aminoalkyl-derivatised
oligonucleotide with a 6-carbon linker arm
attached to an additional fluorophore molecule"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       arm containing
83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /*tag= d
/note= "Forms imperfect hairpin
/note= "Forms imperfect hairpin
rem containing 4 mismatches"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /*tag= b
/note= "Forms imperfect hairpin
/note= "forms imperfect hairpin
arm containing 4 mismatches"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note= "6-carbon molecular linker
flourescein molecule and occupying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          e as a base"
.83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83
   A.
                                                                                                                                                                                                                                                                            English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽P
                                                                                                                                                                                                                                                                                                                                                                                 RES
                                                                                                                                                                                                                                                                                                                                                                                 INST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            occupying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         with the competitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            with the competitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          r containing
ng the same
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              126
```

```
밁
                                   Q
                                                                                                    viseful as probes for detecting complementary sequences to evaluate development and/or differentiation of tumours claim 1; Fig 1; 67pp; French.

The chicken nov gene is stimulated in avian nephroblastoma induced to by avian myeloblastoma virus but not in normal adult kidney. The chicken embryonic fibroblasts screened with a tumour-derived probe. Chicken embryonic fibroblasts screened with a tumour-derived probe. Chicken embryonic fibroblasts screened with a tumour-derived probe. Chicken embryonic fibroblasts screened with a tumour-derived probe. Chicken embryonic fibroblasts screened with a tumour-derived probe. Chicken embryonic fibroblasts screened with a tumour-derived probe. Chicken embryonic fibroblasts screened with a tumour-derived probe. Chicken embryonic fibroblasts screened with a tumour-derived probe. Chicken was cloned in Bluescript KS+ to form plasmid pclK which was calaided used to screen a human placental DNA library. A nov-considered with hybridise to the chicken nov gene under stringent conditions (i.e. 50% formamide, 5 x SCC) are claimed.

So sequence 1975 Bp; 522 A; 451 C; 486 G; 516 T;
                                                          Query Match
Best Local S
Matches 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                             (CNRS) CENT NAT RECH
Martinerie C, Perbal
WPI; 93-036377/04.
                                                                                                                                                                                                                                                                                     P-PSDB; R31599
                                                                                                                                                                                                                                                                                                                                                        WO9300430-A.
07-JAN-1993.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                exon
                                                                                                                                                                                                                                                                                                                                                                                                                                              exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    exon
              53
                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           signal_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                polya_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chicken nov coding sequence.
avian nephroblastoma; avian myeloblastoma virus; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ω36031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        polya_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1089 TTTAATTRIGCTTTTTTTTTTTTTTGGGCTTTTGGGAAAAGTCAAAATAAAACA 1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24-MAY-1993
CGTCTTGCTGCTGACCACGCTCCTCGTGCCTGCACACCTGGTGGCCGCCTGGAGCAATAA 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
                                                          101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTGGTGAAAGTCAAAACAAAAAA 83
                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              standard;
                                                       Conservative
                                                                                                                                                                                                                                                                                                                                F00589.
FR-007807.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                        AT RECH SCI.
Perbal B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /number= 1
93. .321
/*tag= f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /*tag= 0
                                                                                                                                                                                                                                                                                                                                                                                                                                            /number= 3
                                                                                                                                                                                                                                                                                                                                                                               /number=
                                                                                                                                                                                                                                                                                                                                                                                            /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                 'number=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /*tag= d
1. .92
                                                                                                                                                                                                                                                                                                                                                                                                      83. .1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       number = 2
                                                                                                                                                                                                                                                                                                                                                                                                                                *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ′*tag= e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cDNA; 1975
                                                                 2.8%;
52.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . 573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2.6%;
74.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    o
                                                  Score 35.8; D
Pred. No. 1.2;
0; Mismatches
                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 33.2;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                <u>ن</u>
                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                   87;
                                                                        1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1.
                                                                        Length 1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                              ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
```

```
RESULT 10
T51376/c
ID T51376 standard; cl
AC T51376;
DT 22-APR-1997 (firs
DE D. immitis venom a
KW Venom allergen ant
KW Venom allergen ant
KW nDivA833; pDLVA221
OS Dirofilaria immiti
FH Key
FT cds
54
FT cds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
T51301
ID 181
ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1220 CAATTYCAAAAGGCTGCTGA 1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nucleic acid encoding helminth venom allergen antigen 5-like protein - pref. from Dirofilaria immitis or Onchocerca volvulus, useful esp. in vaccines to prevent helminth infection Claim 12, Page 95-96; 124pp; English.

A CDNA sequence (T51381) is the complementary strand of the Dirofilaria immitis nucleic acid nDivA833 (T51376), which codes helminth vA5-like gene nucleic acids (T51376-97) can be used to produce VA5-like proteins (W11480-86) either in vitro or in vivo. helminth Infection.

Sequence 243 no. 166 in the protects an animal from R14 no. 166 in the protects an animal from Sequence R14 no. 166 in the protects an animal from Sequence R14 no. 166 in the protects an animal from Sequence R14 no. 166 in the protects an animal from Sequence R14 no. 166 in the protects an animal from Sequence R14 no. 166 in the protects an animal from Sequence R14 no. 166 in the protects an animal from Sequence R14 no. 166 in the protects an animal from Sequence R14 no. 166 in the protects an animal from Sequence R14 no. 166 in the protects an animal from Sequence R14 no. 166 in the protects an animal from Sequence R14 no. 166 in the protects an animal from Sequence R14 no. 166 in the protects an animal from Sequence R14 no. 166 in the protects an animal from Sequence R14 no. 166 in the protects and A14 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (HESK-) HESKA CORP.
Tripp CA, Wisnewski N;
WPI; 97-020935/02.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28-NOV-1996.
23-MAY-1996; U07709.
23-MAY-1995; US-450944.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          W09637218-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              D. immitis VAS nucleic acid nDiVA833 complementary Venom allergen antigen 5-like gene; VAS; helminth; nDiVA833; PDiVA221; vaccine; heartworm; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Dirofilaria immitis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           230 GAGCTGCTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CACAATCCAGATTTTGCTGA 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAATATCAAATATATGAACAAAATTAAATATTGAAAATGAAAATTTTTTCATTTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGAAGTAAGATGTTTGAAGCTTATGGAAATTTGAGTAACAACAGCTTTGANCTGAGAG 1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTTTTTTTTTTTTGGGCTTTGGGAAAAGTCAAAATAAAACAACCAGAAAAACCCCTGA 1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTGCCCGCCGTGCTGGACGGCTGCGGCTGCTGCTGGTGTGCGCCCGGCAGCGCGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGCCCCCGGCCCTGCGGCGGGGGCGCTG---CCCCGGGAGCCGCCGCGGCTGCGCCCCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   l Similarity 52.1
73; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACTTGCTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                            CDNA; 833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cDNA; 833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2.7%;
52.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              259 A;
                                                                                                                                                                                                                                                                                                                            BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; Score 34.6; D; Pred. No. 1.7; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           165 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

Venom allergen antigen 5-like gene clone venom allergen antigen 5-like gene; vA5; helminth; pnDivA833; PDivA221; vaccine; heartworm; ss.

Location/Qualifiers 54. .719

(first entry)

Dirofilaria immitis.

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            없
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P-SSB; w11479.

NR P-SSB; w11479.

NR P-SSB; w11479.

NR P-SSB; w11479.

NR Nucleic acid encoding helminth venom allergen antigen 5-like protein representation birofilaria immitis or Onchocerca volvulus, useful esp. 1 n vaccines to prevent helminth infection

Claim 4; Page 89-90; 124pp; English.

C A cDNA clone (T51376), designated nDivA833, codes for the full-1 not compared to the full-1 not compared to the full-1 not compared to the full-1 not compared to the full-1 not compared privA221, of Dirofilaria immitis. It was isolated from 2 not compared to produce by 1 numitis cDNA library constructed from 3rd stage larvae by 2 nucleic acids (T51376-97) can be used to produce VA5-like gene nucleic acids (T51376-97) can be used to produce VA5-like proteins 2 (W11480-86) either in vitro or in vivo. The proteins elicit an 2 manune response that protects an animal from helminth infection.

SQ Sequence 833 BP; 299 A; 110 C; 165 G; 259 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 73
                                        30-AUG-1991; 752427.
30-AUG-1991; US-752427.
14-DEC-1993; US-157628.
(UYSF-) UNIV SOUTH FLORIDA.
Bradham DM. Grotendorst GR;
WPI; 95-16114/21.
P-PSDB; R79964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO9637218-A1.
28-NOV-1996.
23-MAY-1996; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tripp
                                                                                                                                                                                                                         Homo
                                                                                                                                                                                                                                                  Connective tissue growth factor cDNA.

Connective tissue growth factor; CTGF; wound healing; vulnerary; cell proliferation; cancer; fibrosis; atherosclerosis; diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                    1220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₹160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              signal_peptide
 wound healing and 
disorders.
          New connective tissue growth factor - used to develop prods. for wound healing and for diagnosis and therapy of cell proliferative
                                                                                                                                                               US5408040-A.
                                                                                                                                                                                                                                       therapy; mitogen; ss.
                                                                                                                                                                                                                                                                                                                                                                                                     802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (HESK-) HESKA CORP.
                                                                                                                                                                                                                                                                                                12-JUN-1996 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 769
                                                                                                                                                                                                                         sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTTTTTTTTTTTTGGGCTTTGGGAAAAGTCAAAATAAAACAACCAGAAAACCCTGA 1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   p CA, Wisnewski N;
97-020935/02
                                                                                                                                                                                                                                                                                                                                                                                                        CACAATCCAGATTTTGCTGA 690
                                                                                                                                                                                                                                                                                                                                                                                                                                  CAATTYCAAAAGGCTGCTGA 1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGAAGTAAGATGTTTGAAGCTTATGGAAATTTGAGTAACAACAGCTTTGANCTGAGAG 1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAATATCAAATATATGAACAAAATTAAATTTGAAAATGAAAATTTTTTCATTTTTG
                                                                                                                                                                                                                                                                                                                              standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-450944.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /*tag= b
102. .716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note= "the coding is represented by : 54. .101
                                                                                                                                                                                         Location/Qualifiers 130. .1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          represented
                                                                                                                                                                            /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /*tag= c
/note= "the
                                                                                                                                                                                                                                                                                                                              CDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2.7%;
52.1%;
                                                                                                                                                                                                                                                                                                                               2075
                                                                                                                                                                            þ
                                                                                                                                                                                                                                                                                                                               股
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>سر</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mature peptide-encoding sequence is
by sequence nDiVA205"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 34.6; DB pred. No. 1.7; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g sequence (minus the stop codon) sequence nDivA663"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 833;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
```

```
TRESULT
TO THE SULT
his sequence represents the CDNA encoding the human connective tissue growth factor (CTGF). CTGF is related immunologically and biologically controlled to platelet-derived growth factor (PDGF), but is encoded by an unrelated gene. CTGF is thought to play a significant role in the normal connective was isolated by screening a cDMA library from human umbilical content was isolated by screening a cDMA library from human umbilical content was isolated by screening a cDMA library from human umbilical content was isolated by screening a cDMA library from human umbilical content with anti-PDGF antibodies. CTGF can be used to accelerate wound healing. Also, elevated levels of CTGF may be dispostic of proliferative diseases involving outgrowth of connective contistue cells, such as cancer, fibrotic disease and atheroscierosis. All content cells, such as cancer, fibrotic disease and atheroscierosis. All content cells, such as antibodies (which can also serve as assay reagents). Antisense culdeic acids, and ribozymes could also be used to inhibit CTGF concection. The advantage with using CTGF is that it is more stable, and cless susceptible to protease degradation than PDGF, and other growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Example 5; Column 15-18; 12pp; English.

CA cDNA clone (T04226), designated DB60R32, codes for human connective tissue growth factor (CTGF) (R79964), a protein that connective tissue growth factor (CTGF) (R79964), a protein that connective tissue cells and which binds to the platelet-derived growth factor (PDGR) receptor. The cDNA was obtd. from a library of human umbilical vein endothelial cell cDNA in vector lambda gtl1 by screening with an anti-PDGF antibody. The cDNA is useful for screening with an anti-PDGF antibody. The cDNA is useful for cribozyme constructs used to treat disorders associated with overgrowth of tissue cells, such as cancer, fibrotic diseases and atherosclerosis.

Sequence 2075 BP; 491 A; 558 C; 546 G; 480 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US5585270-A.
17-DEC-1996.
30-AUG-1991; 752427.
30-AUG-1991; US-752427.
14-DEC-1993; US-167628.
10-FEB-1995; US-386680.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (UYSF-) UNIV SOUTH E
Bradham DM, Grotend
WPI; 97-051180/05.
P-PSDB; W11302.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    T51234 stand:
T51234;
18-MAR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Connective tissue growth factor coding sequence.

Connective tissue growth factor; CTGF; human; connective tissue cell;

Connective disease; platelet-derived growth factor; PDGF; development;

proliferative disease; platelet-derived growth factor; PDGF; development;

tissue growth; repair; umbilical vein endothelial cell; HUVE cell;

antibody; wound healing; cancer; fibrotic disease; atherosclerosis;

inhibitor; protease degradation; growth factor; therapy; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               proliferative disease
Claim 10; Column 15-18; 11pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New nucleic acid encoding connective for accelerating wound healing, also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              314 AGCAGCTGGGCGAGCTGTGC 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAGCCCGCGCTGCAAGAGGACAGTGCTCGACGACTGTTGGCTGCTGCTGCAGTTGTGCGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGGGCGGGGAGAAACTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTGCCCGGCGGCGTGAGCCTCGTGCTGCACGGCTGCCGCCTGCTGCCGCGTCTGCGCCA 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOUTH FLORIDA. Grotendorst GR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers 130. .1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    connective tissue growth factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 35.2;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tissue growth for diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  factor - useful and treatment of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein that
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

뮍 δÃ 문 Š

```
γQ
                                                                                                          δÃ
                                                                            밁
  문
                                                                                                                                                                                                                                      Claim 20; Page 50-52; 76pp; English.

Claim 20; Page 50-52; 76pp; English.

C a CDNA clone (T45360) codes for novel human connective tissue growth factor (CTGF) (M09089), a PDGF-immunorelated protein that may play a close significant role in the normal development, growth and repair of the normal development, growth and repair of the following connective tissue cells, such as a growth factor in connective tissue cells, such as cancer, tumour connective tissue cells, such as cancer, tumour connective tissue cells, such as cancer, tumour connective tissue cells, such as cancer, tumour connective tissue cells, such as cancer, tumour connective tissue cells, such as cancer, tumour connective tissue cells, such as cancer, tumour connective tissue cells, such as cancer, tumour connective fibrosis, glaucoma) and atherosclerosis. The cDNA clone was closed from a HUVEC CDNA library using anti-PDGF antibody. CTGF uncleic acids can be used for recombinant prodn. of CTGF and as concleic acids can be used for recombinant prodn. of CTGF and as concleic acids can be used for recombinant prodn. of CTGF and as concleic acids can be used for recombinant prodn. of CTGF and as concleic acids can be used for recombinant prodn. of CTGF and as concleic acids can be used for recombinant prodn. of CTGF and as concleic acids can be used for recombinant prodn. of CTGF and as concleic acids can be used for recombinant prodn. of CTGF and as concleic acids can be used for recombinant prodn. of CTGF and as concleic acids can be used for recombinant prodn. of CTGF and as concleic acids can be used for recombinant prodn. of CTGF and as concleic acids can be used for recombinant prodn. of CTGF and as concleic acids can be used for recombinant prodn. of CTGF and as concleic acids can be used for recombinant prodn. of CTGF and as concleic acids can be used for recombinant prodn. of CTGF and as concleic acids can be used for recombinant prodn. of CTGF and as concleic acids can be used for recombinant prodn. of CTGF and as concleic acids can be use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ၁၁ ရှ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       factors i
high Cys
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (UYSF-) UNIV SOUTH FLORIDA.
Bradham DM, Grotendorst GF
WPI; 97-042659/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO9638172-A1.
05-DEC-1996.
31-MAY-1996; U08140.
31-MAY-1996; WO-U08140.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human connective tissue growth factor cDNA.

Connective tissue growth factor; CTGF; mitogen; cell proliferation; wound healing; cancer; tumour; fibrosis; glaucoma; atherosclerosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Connective tissue growth factor coding sequence and protein in the treatment of proliferative disorders and to accelerate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P-PSDB; W09089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      T45360;
26-APR-1997 (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      diagnosis; therapy; antisense; triple
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           T45360 standard; cDNA;
314
                                       233
                                                                            254
                                                                                                                   173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              314 AGCAGCTGGGCGAGCTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   233 CAGGGCGGGGAGAAACTTGC 252
                                                                     AGCAGCTGGGCGAGCTGTGC
                                     CAGGGGGGGGAGAAACTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGCCCGCGCTGCAAGAGGACAGTGCTCGACGACTGTGGCCTGCCGACTGTGCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTGCCCGGCGGGCGTGAGCCTCGTGCTGCACGGCTGCGGCTGCTGCCGCGTCTGCGCCA 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       s involved in s content. Se 2075 BP;
                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers 130. .1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entry)
                                                                                                                                                                          2.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            wound healing.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P
                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₽P
                                                                                                                                                                      Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 35.2; D
Pred. No. 1.9;
                                                                                                                                                  red. No. 1.9;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     558 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This is believed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      helix;
                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     546 G;
                                                                                                                                                      28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ribozyme; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tissue growth that may play a repair of
                                                                                                                                                                                             2075;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            due
                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             - used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           wound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ç
                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

14

```
RESULT

169172.

ID 176

AC 76

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ameliorating cell proliferative disorder associated with connective tissue growth factor - comprises the administration of an antibody which binds to connective tissue growth factor and not to platelet-derived growth factor

PT platelet-derived growth factor

PT platelet-derived growth factor

PT platelet-derived growth factor

CA method has been developed for ameliorating a cell proliferative disorder associated with connective tissue growth factor (CTGF). The method comprises the administration of an antibody or its fragment that binds to CTGF and not to platelet-derived growth factor (PDGF), to the cite of the disorder. CTGF is related immunologically and biologically to PDGF. The present sequence encodes CTGF. The method is used to treat conditions involving the overgrowth of connective tissue cells such as cancer, atherosclerosis and other fibrotic diseases.

SQ Sequence 2075 BP; 491 A; 558 C; 546 G; 480 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 52
                   14-NOV-1996; U18624.
14-NOV-1995; US-557309.
(CORI-) CORIXA CORP.
Houghton RL, Lodes MJ,
WPI; 97-289413/26.
P-PSDB; W26534.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11-SEP-1996; 712302.

30-AUG-1991; US-752427.

14-DEC-1993; US-7628.

11-SEP-1996; US-712302.

(UYSF-) UNIV SOUTH FLORIDA.

Bradham DM, Grotendorst GR;

WPI; 98-426958/36.
                                                                                                                              22-MAY-1997.
14-NOV-1996;
14-NOV-1995;
                                                                                                                                                                                                                                                                                                           12-JAN-1998 (first entry)
Trypanosoma cruzi antigen (ubiquitin) cDNA.
Antigen: epitope; vaccine; protective immunity;
diagnosis; therapy; immunoassay; ubiquitin; ss.
Trypanosoma cruzi Tulahean strain C2.
                                                                                                                                                                                                                 W09718475-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           T69172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P-PSDB; W62084.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human connective tissue growth factor encoding cDNA.

Human; connective tissue growth factor; CTGF; PDGF; diagnosis; cancer;
platelet derived growth factor; ameliorating cell proliferative disorder;
atherosclerosis; fibrotic disease; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1/c
169172 standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US5783187-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        V38085 standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15-SEP-1998 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCAGCTGGGCGAGCTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGGGCGGGGAGAAACTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAGCCCGCGCTGCAAGAGGACAGTGCTCGACGAGCTGTGGCCTGCCGAGTGTGCGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTGCCCGGCGGGCGTGAGCCTCGTGCTGCACGGCTGCCGCCTGCCGCCTCTGCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
Trypanosoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                          Location/Qualifiers
45. .431
                                                                                                                                                                                                                                         /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag= a
/product= "connective tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers 130. .1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2.8%;
  cruzi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2075
                                                                                                                                                                                                                                         þ
                                                                               Reed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ΒP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
Pred.
infection
                                                                               SG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              red. No. 1.9;
Mismatches
                                                                             Skeiky
γď
detecting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          growth
                                                                                                                                                                                                                                                                                                                                                                        Chagas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                        disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
Ş
                                                                                                                                                                                    밁
                                                                                                                                                                                                                    Qy
Search completed: May
Job time: 1624 sec
                                                                                                                                                                                                                                                                                                                                                                pr povel antigens - which are useful in vaccines to provide protective immunity against Chagas' disease

Claim 1; Page 50-51; 110pp; English.

Critis novel DNA molecule was isolated by screening a Trypanosoma cruzi cDNA expression library with pools of sera from infected individuals. It encodes T. cruzi with gools of sera from infected conditionals. It encodes T. cruzi with gools of sera graph code full-length antigens (see W2630-41), or epicope-containing repeat sequences (see W1904-102, W19079-86 and W26542-44) of native antigens, that can be used in a variety of immunoassays for detecting T. cruzi infection in a blood, serum, plasma, saliva, cerebrospinal fluid or urine sample. The polypeptides are also useful in vaccines and pharmaceutical compositions for inducing protective immunity against Chagas disease. The isolated DNA molecules can be used for recombinant production of the antigenic polypeptides.

Sequence 581 BP; 160 A; 139 C; 155 G; 127 T;
                                                                                                                                                                                                                                                                Query Match 2.7
Best Local Similarity 63.4
Matches 52; Conservative
                                                                                                                                      1149 AAAACCCCTGAAGGAAGTAAGA 1170
                                                                                                                                                                                                     1089 TITAATIRIGCTITTITTITTITTITGGGCTTITGGGAAAAGTCAAAATAAAACAACCAG 1148
                                                                                                   3, 1999, 22:00:48
                                                                                                                                                                                                                                                                                   2.7%;
                                                                                                                                                                                                                                                                  Score 34; DB 1;
Pred. No. 2.1;
0; Mismatches 3
                                                                                                                                                                                                                                                                    30;
                                                                                                                                                                                                                                                                                                     Length 581;
                                                                                                                                                                                                                                                                  0; Gaps
```

THIS PAGE BLANK (USPTO)

Database Searched: Scoring table:

: t

Title: Perfect score: Sequence:

8

protein

8

homo sapien
homo sapien
homo sapien

rattus norv

sapien

0 homo sapien 6 homo sapien 5 homo sapien 4 caenorhabdi 6 aedes aegyp 8 drosophila

```
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein search, using sw model
           Query
Match
                                                                                                                                                                                                                                                                                                                                                                        9:
10:
11:
12:
13:
14:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  May 3, 1999, 17:43:40 ; Search time 47.06 Seconds (without alignments)
191.088 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SPTREMBL_8:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180763 seqs, 55169189 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-037-460-2_COPY_1_163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MKSVLLLTTLLVPAHLVAAW.....NRFVSLTEHDMASGDGNIVR 163
                                                                                                                                                                                                                                                                                                                                                                                               sp_bacteria:*
sp_rodent:*
sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GenCore version 4.5
Copyright (c) 1993 - 1998 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                           sp_phage:*
sp_plant:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                               sp_invertebrate:*
sp_mammal:*
                                                                                                                                                                                                                                                                                                                                                                                                                                             sp_organelle:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                      sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sp_human: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sp_fungi: *
                                                                                                                                                                                                                                                                                                                                                                     sp_vertebrate:*
sp_unclassified:*
sp_archea:*
         184
1574
480
220
830
830
830
830
343
343
357
1116
1792
1645
1792
1645
1792
1645
1792
181
281
1792
181
281
1792
181
281
1792
181
281
1792
181
281
1792
181
281
1792
181
281
1792
181
281
1792
181
281
181
281
191
281
191
281
                                                              10
2
12
                                                                                                                                                                                                                                                                                      BB
        015330

0 P97682

0 088281

092743

014162

043701

043775

07607

0743775

0754774

0 054774

0 054774

0 054774

0 054774

0 054774

0 054775

2 073791

2 07578

0 088813

0 098813

0 098656

6 091656

6 091656

0 09881

0 09881

0 09881

0 09881

0 09881

0 09881

0 098518

0 093518
                                                                                                                                                                                                                                                                                                              SUMMARIES
                  p97682 rattus norv
088281 rattus norv
088281 rattus norv
082743 homo sapien
063404 rattus norv
014162 homo sapien
043701 homo sapien
043705 homo sapien
043705 homo sapien
042607 xenopus lae
024774 enchytraeus
054775 mus musculu
057484 gallus gall
015230 homo sapien
088812 mus musculu
077991 rattus norv
p97927 mus musculu
p70570 rattus norv
p97927 mus musculu
p70570 rattus norv
p97927 mus musculu
p70570 rattus norv
p979381 rattus norv
090656 gallus gall
0143666 triticum ae
p91104 caenorhabdi
p97881 rattus norv
093518 gloyddis ha
093518 gloyddis ha
093518 taurus
                                                                                                                                                                                                                                                            Q15330 homo
                                                                                                                                                                                                                                                                                Description
  homo sapien
homo sapien
RESULT
P97682
ID P9
AC P9
DT 01
DT 01
DT 01
DT 01
                                                                                                                                                                                                                                              Q
                                                                                                                             밁
                                                                                                                                             δÃ
                                                                                                                                                                밁
                                                                                                                                                                               δÃ
                                                                                                                                                                                                Query Match
Best Local sim
Matches 163;
                                                                                                                                                                                                                                                                                                                                                                                                Q15330 PRELIMINARY; PRT;
Q15330;
Q1-NOV-1996 (TREMBLREL 01, CREATED)
Q1-NOV-1996 (TREMBLREL 01, LAST SEQI
Q1-NOV-1998 (TREMBLREL 08, LAST ANNI
ESM-1 SECRETORY PROTEIN PRECURSOR.
      P97682;
P97682;
01-MAY-1997
01-MAY-1997
                                                                                                                                                                                                                                              CHAIN
SEQUENCE
                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.

MEDLINE; 9635375.

LASSALLE P.M., MOLET S., JANIN A., VANDER-HEYDEN J.E., TAVERNIER J.,

"FIERS W., DEVOS R.E., TONNEL A.E.B.;

"ESM-1 is a novel human endothelial cell-specific molecule expressed in lung and regulated by cytokines.";

J. BIOL. CHEM. 271:20458-20464(1996).

EMBL; X89426; E189266; -.

PEAM; PF00219; IGFBP; 1.
                                                                                SIGNAL
                                                                                                                                                                                                                                                                                                                                                                    HOMO SAPIENS (HUMAN).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; MAMMALIA; EUTHERIA; PRIMATES;
CATARRHINI; HOMINIDAE; HOMO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30
31
32
33
33
33
33
33
33
33
34
44
44
44
45
                                                                                                                            61
                                                                                                                                             61
                                                                                                                                                     RGETCYRTYSGMDGMKCGPGLRCQPSNGEDPFGEEFGICKDCPYGTFGMDCRETCNCQSG
                                                                                                                            RGETCYRTVSGMDGMKCGPGLRCQPSNGEDPFGEEFGICKDCPYGTFGMDCRETCNCQSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           82
78.5
84
75.5
82
85
85
86
87
8.5
78.5
78.5
78.5
78.5
78.5
                                                                                                                                                                                               Similarity 100.
63; Conservative
(TREMBLREL. 03, CREATED)
(TREMBLREL. 03, LAST SEQUENCE UPDATE)
(TREMBLREL. 03, LAST ANNOTATION UPDATE)
                                        PRELIMINARY;
                                                                                                                                                                                                                                             184 AA;
                                                                                                                                                                                                                                                       20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10.0
9.5
10.2
10.2
10.4
10.4
9.8
9.8
9.3
9.3
9.3
                                                                                                                                                                                                                                           184 E
                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         530
1106
1106
1106
789
789
1999
2003
452
1176
127
518
524
727
518
524
                                                                                                                                                                                                                                                                                                                                                                                                         01, CREATED)
01, LAST SEQUENCE UPDATE)
08, LAST ANNOTATION UPDAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2122233322210
                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                024526
014564
017494
043663
043663
099940
000306
060295
016176
046176
024528
024810
0214810
0214810
0214810
0214810
0214810
                                                                                                                                                                                                                                     POTENTIAL.
ESM-1 SECRETORY PROTEIN.
; 08D109DF CRC32;
                                                                                                                                                                                                    Score 820; DB 2;
Pred. No. 5.1e-81;
                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALIGNMENTS
                                       184
                                                                                                                                                                                                                                                                                                                                                                                                                                                184
                                       A
                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                             0
                                                                                                                                                                                                             Length 184;
                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q24526 drosophila
Q14564 homo sapien
Q17494 caenorhabdi
Q43663 triticum ae
P70505 rattus norv
Q99940 homo sapien
Q03066 homo sapien
Q60295 homo sapien
Q16364 caenorhabdi
Q46176 aedes aegyp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q94528
Q14810
Q14808
Q60283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     014947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             088279
```

Gaps

0

120 60 60

```
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RESULT
RE
       밁
                                             Š
                                                                                                밁
                                                                                                                                         δÃ
                                                                                                                                                                                              В
                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ϋ́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ΩÝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SORFRRRRCCS
                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              088281;
01-NOV-1998
01-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEGED.

MEGED.

RATTUS (RAT).

EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; MAMMALIA;

EUKARYOTA; METAZOA; CHORDAE; MURIDAE; RATTUS.
                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE; PS00010; ASK_HYDROXYL;
PROSITE; PS01186; EGF_2; 23.
PROSITE; PS01187; EGF_CA; 5.
GLYCOPROTEIN; EGF-LIKE DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE; 98360089.

MAKAYAMA M., NAKAJIMA D., NAGASE T., NOMURA N., "Identification of high-molecular-weight protein EGF-like motifs by motif-trap screening."; GENOMICS 51:27-34(1998).

EMBL; AB011532; D1033425; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
STRAIN-SPRAGE DAWLEY; TISSUE-PINEAL GLAND;
WANG X., BROWNSTEIN M.J., YOUNG W.S.;
SUBMITTED (DEC-1996) TO EMBL/GENBANK/DDBJ DATA
EMBL; U80818; G1750198; -
                                                                                    9696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=SPRAGUE-DAWLEY; TISSUE=BRAIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RATTUS NORVEGICUS (RAT).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; MAMMALIA; EUTHERIA; RODENTIA;
SCIUROGNATHI; MURIDAE; MURINAE; RATTUS.
                                                                                                                                                                                              642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
       729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                 52
                                                                                                                                                                                                                                               15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MKSVLLLTTLLVPAHLVAAWSNNYAVDCPQHCDSSECKSSPRCKRTVLDDCGCCRVCAAG
                              ----DCPYGTFGMDCRETCNCQSGICDRGTGKCL 130
                                                                                                GPGCRHRCT---
                                                                                                                                                                                         HLACPPWA---FGPGCSEDCLCEQSHTRSCNPKDGSCSCKAGFQGERCQ----AECESGFF
                                                                                                                                                                                                                                       HLV-AAWSNNYAVDCPQHC-----
EDCGQECPVGTFGVNCSGSCSCVGAPCHRVTGECL 763
                                                                                                                                      --GCCRVCAAGRGETCYRTVSGMDGMKCGPGLRCQPSNGEDPFGEEFGICK-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RGETCYRTVSGMDGMKCGPGLRCQPSNGEDPFGEEFGICKDCPYGTFGMDCRETCNCQSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ICDRGTGKCLKFPFFQYSVTKSSNR-FVSLTEHDMASGDGNIVR 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ICDRVTGRCLDFPFFQYAAAKSPSRTSASQTERDAASGDGNAVR 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PGETCYRTVSGMDGVKCGPGLKCHFYSEEDDFGDEFGVCKDCPYGTFGMDCKETCNCQSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MKSLLLLTTLLIPLHLGMAWSAKYAVDCPEHCDNTECRSSLRCKRTVLDDCGCCQVCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          124;
                                                                                                                                                                                                                                                                                                                                                                                                                  1574 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      184 AA;
                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (TREMBLREL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TREMBLREL.
                                                                                                                                                                                                                                                                                                                    16.0%;
23.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                  KE DOMAIN.
165445 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20075 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     79.0%; Score 647.5; DB 10; 75.6%; Pred. No. 1.7e-62; ive 21; Mismatches 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       888
                                                                                                                                                                                                                                                                                          23;
                                                                                                                                                                                                                                                                                  Score 131; DB
Pred. No. 2.8e
23; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3457564C CRC32;
                                                                                              -CQPGVACDPVSGE---
                                                                                                                                                                                                                                          -----DSSECKS---SPRCKRTVLDDC----
                                                                                                                                                                                                                                                                                                                                                                                                                  C49E6EA6 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1574
                                                                                                                                                                                                                                                                                     DB 10;
2.8e-06;
hes 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              proteins with multiple
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BANKS
                                                                                                                                                                                                                                                                                                                                     Length 1574;
                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EUTHERIA;
                                                                                           -CRTQCPPGYQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OHARA O.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          184;
                                                                                                                                                                                                                                                                                        72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1:
                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                         695
                                                                                                                                                                                                                                       52
                                                                                                                                         101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1;
```

```
RESULT DO 3404 AC OCC DT OCC DT OCC OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT OCC DT O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A LONG CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF T
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEBS LETT. 398:187-192(1996).
EMBL; Y07921; E275186; -
PFAM; PF00050; Kazal; 1.
PFAM; PF00089; trypsin; 1.
PFAM; PF00219; IGFBP; 1.
PFAM; PF00595; PDZ; 1.
PROTEASE; SERINE PROTEASE.
SEQUENCE 480 AA; 51286 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q92743;
Q92743;
Q92743;
O1-FEB-1997 (TREMBLREL. C
O1-FEB-1997 (TREMBLREL. C
O1-NOV-1998 (TREMBLREL. C
                                                                                                                                             NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q63404 PRELIMINARY; PRT; 220 AA. Q63404; Q63404; Q1 CREMBLREL. 01, CREATED) 01-NOV-1996 (TREMBLREL. 01, LAST SEQUENCE UPDATE) 01-NOV-1998 (TREMBLREL. 08, LAST ANNOTATION UPDATE) (CLONE REM4) ORF (FRAGMENT).
RATTUS NORVEGICUS (RAT).
RATTUS NORVEGICUS (RAT).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; MAMMALIA; SCIUROGNATH; MURIDAE; MURINAE; RATTUS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE: 96235155.

ASAKURA K., POGULIS R.J., PEASE L.R., RODRIGUEZ MARCHINE MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL MACHINE CONTROL M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. STRAIN-HOLZMAN; TI
                                                                                                                                                                                                                                                               GLYCOPROTEIN.
                                                                                                                                                                                                                                                                                                                        EMBL; L41686; G780367; -.
PROSITE; PS01186; EGF_2; 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NOVEL SERINE PROTEASE.
HOMO SAPIENS (HUMAN).
EUKARYOTA; METAZOA; CHORDATA;
                                                                                                                                                                                                                                                                                      PFAM; PF00008; EGF;
                                                                                                                                                                                                                                                                                                                                                                                                     . NEUROIMMUNOL. 65:11-19(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ZUMBRUNN J., TRUEB B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE; 97131593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATARRHINI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Primary structure of a putative IGF-binding proteins."; FEBS LETT. 398:187-192(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE-PLACENTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           57 CAAGRGETCYRTVSGMDGMKCGPGLRCQPSNGEDPFG 93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12 LLLLLAAPASAQLSRAGRSAPLAAGCPDRCEPARCPPQPEHCEGGRAR----DACGCCEV 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 VLLLTTLLVPAHLV-AAWSNNYAVDCPQHCDSSECKSSP-----RCKRTVLDDCGCCRV 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGAPEGAAC----GLQEGPCGEGLQCVV-----PFG 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                             1
220
220 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HOMINIDAE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE-BRAIN;
                                                                                                                                         1
220
23231 MW;
       13.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               02,
02,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 123.5;
Pred. No. 6.8e
18; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
   Score 111; DB 10;
Pred. No. 7.9e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERTEBRATA; MAMMALIA;
                                                                                                                                                4389BC39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        175BB6D9 CRC32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        serine protease specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             multiple known
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5.8e-06;
hes 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EUTHERIA; RODENTIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EUTHERIA; PRIMATES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             system
d novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
```

Length 220;

å 뮍 Ş 밁 Š

밁

from

human

268 43

371

321 85 Indels Length

87;

Gaps

10;

830;

```
PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESIDENT PRESID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                            01-JUN-1998 (TREMBLREL. 06, CREATED)
01-JUN-1998 (TREMBLREL. 06, LAST SEQUENCE UPDATE)
01-NOV-1998 (TREMBLREL. 08, LAST ANNOTATION UPDATE)
ACETYL LDL RECEPTOR PRECURSOR.
HOMO SAPIENS (HUMAN).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; MAMMALIA;
CATARRHINI; HOMINIDAE; HOMO.
                                                                                                                                                                                                                    043701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE: 96127530.

MEDLINE: 96127530.

**Prediction of the coding sequences of unidentified human The coding sequences of 40 new genes (KIAA0121-KIAA0160) d analysis of cDNA clones from human cell line KG-1.";

DNA RES. 2:167-174(1995).

EMBL; D63483; G1469880; -.

PROSITE: PS01186; EGF_2; 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q14162
Q14162;
01-NOV-1996
         MEDLINE; 98058897
ADACHI H., TSUJIM
                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HOMO SAPIENS (HUMAN).
EUKARYOTA; METAZOA; CHORDATA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-NOV-1996 (TREMBLREL.
01-NOV-1996 (TREMBLREL.
01-NOV-1998 (TREMBLREL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GLYCOPROTEIN.
SEQUENCE 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CATARRHINI; HOMINIDAE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KIAA0149.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KIAA0149 PROTEIN.
                                                                                                                                                                                                                                                                                                                                      322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          212
                                                                                                                                                                                                                                                                                                                                                                                                               269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              138 SCTCL
                                                                                                                                                                                                                                                                                                                                                                          86
                                                                                                                                                                                                                                                                                                                                                                                                                                                   44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18 AAWSNNYAVDCPQHCD-----SSECKSSP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 126 TGKCL 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21
                                                                                                                                                                                                                                                                                                                              DTGHCQRCDPGWLGPRCEDP------CPTGTFGEDCGSTCPTCVQGSCDTVTGDCV
                                                                                                                                                                                                                                                                                                                                                                                                         KHN--EPCSPDTGSCESCEPGWNGTQCQQPCLPGTFGESCEQQCP-----HCRHGEACEP
                                                                                                                                                                                                                                                                                                                                                                                                                                           KRTVLDDC----GCCRVCAAGR------GETCYRTVSGMDGMKCGPGLRCQP 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PGW----WGPECQQQCECVRGRCSAASGECTCPPGFRGARCELPCPAGSHGVQCAHSCGRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GMDGMKCGPGL----RCQPSNGEDPFGEEFGICKD-CPYGTFGMDCRETCNC-QSGICDRG 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHNGGACDAATGQCHCSPGYTGER---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PGKHGPQCEQRC---PCQNGGVCHH-VTGECSCPSGWMGTVCGQPCPEGRFGKNCSQECQ 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SNNYAVDCPQHCDSSECKSSPRCKRTVLDDCGC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
           TSUJIMOTO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           830 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           87460 MW;
         :
:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13.8%;
                                                                                                                                                                                                                                                                                                                                                                    -EDPFGEEFGICKDCPYGTFGMDCRETC-NCQSGICDRGTGKCL 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HOMO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    801,
         ARAI H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 113.5; DB 2
Pred. No. 0.00013;
7; Mismatches 32
                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERTEBRATA; MAMMALIA; EUTHERIA; PRIMATES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CC490A76 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
         INOUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -- CQDECPVGTYGVRCAETCRCVNGGKCYHV 137
                                                                                                                                                                                                                                      830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               830
         ...
...
                                                                                                                                                                                                                                      ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -C-RVCAAGR-GETCYRTVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                  EUTHERIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  830;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        n genes.
deduced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----RC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                         321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  268
                                                                                                                                                                                                                                                                                                                                  371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
   RESULT
076076
ID 07
AC 07
DT 01
                                                                                                                                     밁
                                                                                                                                                                     Š
                                                                                                                                                                                                            묽
                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFT
                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 36; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
 076076;
076076;
01-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROSITE;
PROSITE;
PROSITE;
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     043775;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CHAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              J. BIOL. CHEM. 272:31217-31220(1997)
EMBL; D86864; D1024977; -
PROSITE; PS01186; EGF_2; 6.
SIGNAL; GLYCOPROTEIN.
1 15 POTENTIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                        J. CLIN. PATHOL. MOL. PATHOL. 50:
EMBL; Y11307; E304665; -
PROSITE; PS00222; IGF_BIDDING; 1.
PROSITE; PS01185; CTCK_1; 1.
PROSITE; PS01208; VWFC; 1.
SEQUENCE 381 AA; 42025 MW; 1B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HOMO SAPIENS (HUMAN).
EUKARYOTA; METAZOA; CHORDATA;
CATARRHINI; HOMINIDAE; HOMO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JUN-1998 (TREMBLREL. 01-JUN-1998 (TREMBLREL. 01-JUN-1998 (TREMBLREL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CYR61 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Expression cloning of a novel scavenger endothelial cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MARTINERIE C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      322
                                                                                                                                     109
                                                                                                                                                                     106 --- TFGMDCRETCNCOSG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         212
                                                                                                                                                                                                              58
                                                                                                                                                                                                                                                    59
                                                                                                                                                                                                                                                                                                           44 KRTVLDDC----GCCRVCAAGR------GETCYRTVSGMDGMKCGPGLRCQP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18 AAWSNNYAVDCPQHCD-----SSECKSSP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                         7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               œ
                                                                                                                                 NGESFQPNCKHQCTCIDG
                                                                                                                                                                                                                                              AGRGETCYRTVSGMDGMKCGP--GLRCQPSNGEDPFGEEFGICKD-----CPYG----
                                                                                                                                                                                                                                                                               RALALVVTLLHLTRLALS-----TCPAACHCP--LEAPKCAPGVGLVRDGCGCCKVCA 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PGW----WGPECQQQCECVRGRCSAASGECTCPPGFRGARCELPCPAGSHGVQCAHSCGRC
                                                                                                                                                                                                        KQLNEDCSKTQP-----CDHTKGLECNFGASSTALK---GICRAQSEGRPCEYNSRIYQ 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DTGHCQRCDPGWLGPRCEDP------CPTGTFGEDCGSTCPTCVQGSCDTVTGDCV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SNG-------EDPFGEEFGICKDCPYGTFGMDCRETC-NCQSGICDRGTGKCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KHN--EPCSPDTGSCESCEPGWNGTQCQQPCLPGTFGESCEQQCP----HCRHGEACEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity 24.4
44; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16
830 AA;
(TREMBLREL.
                                                                                                                                                                                                                                                                                                                                                                Conservative
                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VIEGAS-PEQUIGNOT E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               830
87430
                                                                                                                                                                                                                                                                                                                                                            13.5%; Score 110.5; DB 2 26.1%; Pred. No. 0.00014; tive 21; Mismatches 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13.8%;
,80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              %
%
%
%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MW:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17; Mismatches
CREATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POTENTIAL.
ACETYL LDL
1; 936CC3DD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 113.5; DB 2
Pred. No. 0.00013;
                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OT E., NGUYEN V.C., 50:130-136(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERTEBRATA; MAMMALIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1B18FF1A CRC32;
                                       250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RECEPTOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                receptor
                                                                                                                                                                                                                                                                                                                                                                                                 DB 2;
                                                                                                                                                                                                                                                                                                                                                              44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PERBAL
                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                               Length
```

EUTHERIA;

37;

Gaps

8

RR RR OCC OCC DIT DAC

δÃ 밁 Ş 밁 Š

```
RESULT
O42607
ID 201
D7 01
D7 
                     Query Match
Best Local S
Matches 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 O42507

PRELIFICATION

042507;

O42507;

O42507;

O1-JAN-1998 (TREMBLREL. 05, LAST SEQUENCE UPDATE)

O1-JAN-1998 (TREMBLEEL. 08, LAST ANDOTATION UPDATE)

O1-NOV-1998 (TREMBLEEL. 08, LAST ANDOTATION UPDATE)

CONNECTIVE TISSUE GROWTH FACTOR XCTGF.

XENOPUS LAEVIS (AFRICAN CLAWED FROG).

PHKARYOTA: METAZOA; CHORDATA; VERTEBRATA; AMPHIBIA; BATRACHIA; AMPHIBIA; DIPOIDEA; PIPIDAE; XENOPODINAE; XENOPUS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local s
Matches 42
                                                                                                                                                                                            SEQUENCE FROM N.A.

YING Z., KING M.L.;

SUBMITTED (ANG-1997) TO EMBL/G

EMBL: U43524; G2342754; -.

EMBL: U43523; G2342754; -.

PROSITE: PS01185; CTCK_1; 1.

PROSITE: PS01208; VWFC; 1.

PFAM; PF00007; CYS_knot; 1.

PFAM; PF00090; tsp_1; 1.

PFAM; PF00090; TSP_1; 1.
                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "CT58, a new member of the connective tissue growth factor interacts with the breast cancer associated mucin MUC1."; SUBMITTED (JUN-1998) TO EMBL/GENBANK/DDBJ DATA BANKS. EMBL; AF083500; G3462836; EMBL; AF074604; G3328192; EMBL; AF074604; G3328192; EMBL; PS00222; IGF_BINDING; 1.

PROSITE: PS00222; IGF_BINDING; 1.

SEQUENCE 250 AA; 26825 MW; 61CE7682 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KUMAR S., HAND A.T., CONNOR J.C., DODDS R.A., RYAN P.J., TRILL J.G., FISHER S.M., SLEMMON J.R., LIPSHUTZ D.B., BARTHOLOMEW V., JAMES I.E., "Identification and cloning of CGF-L from human osteoblasts, a novel cysteine rich protein containing an IGF binding domain."; J. BONE MINER. RES. 13:0-0(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HOMO SAPIENS (HUMAN).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; MAMMALIA;
DDTMATES: CATARRHINI; HOMINIDAE; HOMO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ROWLES J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1998 (TREMBLREL. 08, LAST SEQUENCE UPDATE)
01-NOV-1998 (TREMBLREL. 08, LAST ANNOTATION UPDATE)
CONNECTIVE TISSUE GROWTH FACTOR-LIKE PROTEIN PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KUMAR S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     53 CRVCARRIGEPC----DQLHVCDASQGIVCQPGAGPGGRGALCLLAEDDSSCEVNGRLYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EGETFQPHCSIRCRCEDG
                                                                                                                                                                       PF00219; IGFBP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CRVCAAGRGETCYRTVSGMDGMKCGPGLRCQPSNGEDP-----FGEEFGIC--KDCPY- 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KTHLLAFSLLCLLSKVRTQL------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KSVLLLTTLL----VPAHLVAAWSNNYAVDCPQHCDSSECKSSPRCK---RTVLDDCGC 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --GTFGMDCRETCNCQSG 120
             l Similarity 27.3
39; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENDLER S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                 ₽,
                                                                                                                                      ; 1.
BP; 1.
37966 MW;
                                     12.2%;
27.3%;
                                                                                                                                                                                                                                                                                                                                                                         TO EMBL/GENBANK/DDBJ DATA BANKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              126
                18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16;
     Score 100; DB 12;
Pred. No. 0.0017;
8; Mismatches 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 109; DB 2;
Pred. No. 0.00014;
6; Mismatches 44
                                                                                                                                    4F7E7114 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -CPTPCTCP--WPPPRCPLGVPLVLDGCGC
          38;
                                                     Length 343;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 250;
     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EUTHERIA,
  48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  family,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ANURA;
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           52
11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            80
```

```
밁
                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                         뫄
                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                       ELM1.
MUS MUSCULUS (MOUSE).
EUKARYOTA; METAKOA; CHORDATA;
SCIUROGNATHI; MURIDAE; MURINAJ
                                                                                                                  054775;
054775;
01-JUN-1998
01-JUN-1998
01-NOV-1998
MEDLINE; 98119879.
HASHIMOTO Y., SHINDO-OKADA N.,
SHIROISHI T., TOMA H., YOKOTA
                                 SEQUENCE FROM N.A.
STRAIN-HEN;
                                                                                                                                                                                                                                                                                                                                                                         Cystant,";
earthworm.";
J. BIOL. CHEM. 269:24688-24691(1994).
EMBL; X79344; G488803; -.
EMBL; X79344; G488803; -.
251 AA; 25000 MW; 85747E80 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                         "WILLUHN J., SCHMITT-WREDE H.P., GREVEN H., WUNDERLICH F.;
"CDNA cloning of a cadmium-inducible mRNA encoding a novel
cysteine-rich, non-metallothionein 25-kDa protein in an enchytraeid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ENCHYTRAEUS BUCHHOLZI.
EUKARYOTA; METAZOA; ANNELIDA; CLITELLATA;
TUBIFICINA; ENCHYTRAEIDAE; ENCHYTRAEUS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q24774;
01-NOV-1996 (TREMBLREL.
01-NOV-1996 (TREMBLREL.
01-NOV-1998 (TREMBLREL.
                                                                                                                                                                                                                                                         138
                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A. MEDLINE; 95014230.
                                                                                                                                                                                                               187 CCTPKC 192
                                                                                                                                                                                                                                   126 --TGKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CYSTEINE-RICH-PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q24774
                                                                                                                                                                                 12
                                                                                                                                                                                                                                                                            78
                                                                                                                                                                                                                                                                                                81
                                                                                                                                                                                                                                                                                                                   32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             σ
                                                                                                                                                                                                                                                                                      CEKGECKKGCKEGCCAPKC---GVAGCSCGSGCKCEKGECKPGCTKRCCGTKCGVEDCPC
                                                                                                                                                                                                                                                      GPSCKCEKGD---
                                                                                                                                                                                                                                                                   GPGLRCQPSNGEDPFGEEFGICK-DCP-----YGTFGMDCRETCNCQSGICDRG---- 126
                                                                                                                                                                                                                                                                                                           CDSSECK-----SSPRCKRTVLDDCGCCRVCAAGRGE-----TCYRTVSGMDGMKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTVYRSGESFQSSCKYQCTCIDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SKQLGELCTERDV-----CDPHKGLFCD-----FGSRVNRKIGVCTAREGAPCVFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VTAVLLFALF-----CWVSD-AQECNGECQCP--NKVPVCDPGVRMVQDGCGCCKVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGRGETCY-RTVSGMDGMKCGP--GLRCQPSNGEDPFGE----EFGICKD-----CPYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MKSVLLLTTLLVPAHLVAAWSNNYAVDCPQHCDSSECKSSPRCK---RTVLDDCGCCRVC
                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----TFGMDCRETCNCQSG
                                                                                                                 (TREMBLREL.)
(TREMBLREL.)
                                                                                                                                                                                                                                  129
                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                              12.0%;
                                                              MURINAE; MUS
                                                                                                                 866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01,
10
                                                                                                                                                                                                                                               -CKVNCSKGCCTPKCGVVGCPCGSQCTCEKGSCKKGCSKG
                                                                                                                                                                                                                                                                                                                                      18;
                                                                                                            CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                 Score 98; DB
Pred. No. 0.00
18; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           , CREATED)
, LAST SEQUENCE UPI
, LAST ANNOTATION (
  J.;
                                                                      VERTEBRATA; MAMMALIA;
                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE UPDATE)
        `
`
                                                                                                                                                         367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       251
        NAGAMACHI
                                                                                                                                                                                                                                                                                                                                                       DB 3;
                                                                                                                                                         ₹
                                                                                                                                                                                                                                                                                                                                            .0022;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ያ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OLIGOCHAETA; HAPLOTAXIDA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            UPDATE)
                                                                                                                                                                                                                                                                                                                                    34;
                                                                                                                                                                                                                                                                                                                                                      Length 251;
                                                                                                                                                                                                                                                                                                                                 Indels
                                                                  EUTHERIA; RODENTIA;
        TAKEUCHI
                                                                                                                                                                                                                                                                                                                                42;
       *
                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                186
                                                                                                                                                                                                                                                                                       137
                                                                                                                                                                                                                                                                                                            77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       57
                                                                                                                                                                                                                                                                                                                               7;
```

```
RESULT
057484
ID OS
AC ODT
DT 0
DT 0
DT 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
1D 73791
1D 97
1D 97
1D 07
1D
                                                                                                                                                                                                                                                                             γ
                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                       용
                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SORRERRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
       O57484;
O57484;
O1-JUN-1998 (
O1-JUN-1998 (
O1-NOV-1998 (
LAMININ BETA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               073791 PRELIMINARY; P. 073791; P. 073791; P. 01-AUG-1998 (TREMBLREL 07, CRE. 01-AUG-1998 (TREMBLREL 07, LAS' ENDOTHELIUM-SPECIFIC RECEPTOR T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LYONS M.S., BELL B., STAINIER D.
DEV. DYN. 0:0-0(1998),
EMBL; AF053632; G3005607; -.
SEQUENCE 1116 AA; 122361 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BRĀCHYDANIO RERIO (ZEBRAFISH) (ZEBRA DANIO).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; ACTINOPTERYGII; NEOPTERYGII;
TELEOSTEI; EUTELEOSTEI; OSTARIOPHYSI; CYPRINIFORMES; CYPRINOIDEA;
CYPRINIDAE; RASBORINAE; DANIO.
                                                                                                                                                                                                                                                                                       100
                                                                                                                                                                                                                                            296
                                                                                                                                                                                                                                                                                                                                                                                                                               207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Expression of the Elm1 gene, a novel gene of the CCN (connective tissue growth factor, Cyr61/Cef10, and neuroblastoma overexpressed gene) family, suppresses in vivo tumor growth and metastasis of K-1735 murine melanoma cells."

J. EXP. MED. 187:289-296(1998).

EMBL: AB004873; D1025874; -.

PROSITE; PS01185; CTCK_1; 1.

SEQUENCE 367 AA; 40702 MW; IAB35AB9 CRC32;
                                                                                                                                                                                                                                                                                                                                                                               66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          155 PLCI 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       127 GKCL 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   82 RCQPSNGEDDFGEEFGICKD-----C----PY---GTFGMDCRETCNCQSGI--CDRGT 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               54
                                                                                                                                                                                                                         WRGLSCNDACPDGYYGAGCTQKCVCAKGRCDR 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                    -----KDCPYGTFGMDCRETCNCQSGICDR 124
                                                                                                                                                                                                                                                                                                                                                     YRTVSGMDGMKCGPG--------LRCQPSNGEDFGEEFGIC----
                                                                                                                                                                                                                                                                                                                                                                                                  ITRLIVESCEAGEWGENCTESCERCANGGVCDDTT-----GEC----VCPPGFERGHTC
                                                                                                                                                                                                                                                                                                                                                                                                                                             LTTLLVPAHLVAAWSNNYAVDCPQHCDSSECKSSPRCKRTVLDDCGCCRVCAAG-RGETC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YCDYSGDRPRYA---IGYCAQVVGYGCVLDGVRYINGESFQPNCRYNCTCIDGTYGC---T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DCPQHCDSSECKSSPRCK---RTVLDDCGCCRVCAAGRGETCYRTVSGMDGMKCGP--GL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ECPQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
36; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity 28.2
35; Conservative
B (TREMBLREL. 06, )
8 (TREMBLREL. 06, )
8 (TREMBLREL. 08, )
TA 2-LIKE CHAIN.
                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                 -DIVCGEGRFGAGCKERCVDGVCRALVFCLR---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -SPPRCPLGVSLITDGCECCKICAQQLGDNC----TEAAICDPHRGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STAINIER D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18;
           CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
OR TYROSINE KINASE TIE-2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CREATED)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 98.5; DB 12;
Pred. No. 0.0066;
8; Mismatches 33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 97.5; DB LU;
Pred. No. 0.0034;
""smatches 35;
                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7E60F6C5 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PETERS
                                                                                                             1792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1116
                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          K.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₿
                                                                                                                                                                                                                                                                                                            ----DPYG----CSCASG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                     100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                  255
                                                                                                                                                                                                                                                                                                                                                                                                                                                65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10
```

```
ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMPAGNATION ACCOMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 23.0%,
Whiches 43; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        O15230 PRELIMINARY; PRT; 1645 AA.

O15230; OTEMBLEEL O5, CREATED;

O1-NOV-1998 (TREMBLREL O8, LAST SEQUENCE UPDATE);

O1-NOV-1998 (TREMBLEL O8, LAST ANNOTATION UPDATE);

E KIAAO533 PROTEIN (LAMININ ALPHA 5 CHAIN) (FRAGMENT).

N KIAAO533 OR LAMA5.

S HOMO SAPIENS (HUMAN).

EUKARYOTA; METALOA; CHORDATA; VERTEBRATA; MAMMALIA; EUT.

C CATARRHINI; HOMINIDAE; HOMO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Tissue-specific expression of the human laminin alpha5-chain, and mapping of the gene to human chromosome 20q13.2-13.3 and to distal mouse chromosome 2 near the locus for the ragged (Ra) mutation."; FEBS LETT. 411:296-300(1997).
                                                                                                                                DURKIN M.E., LOECHEL F.,
                                                                                                                                                                                                                                                 "Prediction of the coding sequences of The complete sequences of 100 new cDNA code for large proteins in vitro."; DNA RES. 5:31-39(1998).
                                                                                                                    WEWER U.M.;
                                                                                                                                                           MEDLINE; 97415425.
                                                                                                                                                                                                     SEQUENCE OF 693-1645 FROM
                                                                                                                                                                                      FISSUE-PLACENTA
                                                                                                                                                                                                                                                                                                                                                              NAGASE T., ISHIKAWA K., MIYAJIMA N.,
                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE;
                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE-BRAIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
LIU J., SWASDISON S., XIE W., BREWTON R
MATRIX BIOL. 16:0-0(1998).
EMBL; AF038555; 62708707; -
PROSITE; PS01186; EGF_2; 2.
PROSITE; PS01248; LAMININ_TYPE_EGF; 12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    998 RIGOCLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   125 GTGKCLK 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GALLUS GALLUS (CHICKEN).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; ARCHOSAURIA; AVES;
NECCNATHAE: GALLIFORMES; PHASIANIDAE; PHASIANINAE; GALLUS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GLYCOPROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A. MEDLINE; 93015947.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "A novel laminin Bl chain variant in avian J. BIOL. CHEM. 267:20555-20557(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YQDGRSRQVVCHCSPGYTGPRCDECAPGYYGDPLQPGGHCR-PCQCHNNIDTTDPEACDR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EECDPQTGSCLRCRDHTDGERCQRCAAGHFGNPALGSGQHCRPCPCPDGPGGPRHFAASC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E-----TCYRTYSGNDGMKC-------GPGLRCQPSN-GEDDFGE-EFGI--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRRCDPCQCSGEGSLSAVCD-TVTGQCPCRQGAHGSRCDRCQPGHWGFPTCRPCQCNGHA 878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PQHCDSSECKS----SPRCKRTVLDDCGC------------CRVCA-AGRG 62
                                                                                                                                                                                                                                                                                                                                                                                                     98290545.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1792 AA; 195722 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11.8%;
23.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----CKDCPYGTF-----GMDCRETCNCQSGI-----CDR 124
                                                                                                                                MATTEI M.,
                                                                                                                                                                                                     N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 97;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AFFC9020 CRC32
                                                                                                                 GILPIN B.J., ALBRECHTSEN
                                                                                                                                                                                                                                                                                                                                                                   TANAKA
                                                                                                                                                                                                                                                                                           unidentified human clones from brain v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 12;
0.014;
                                                                                                                                                                                                                                                                                                                                                         A., KOTANI H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        eye. ";
                                                                                                                                                                                                                                                                                      from brain which
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MAYNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1792;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EUTHERIA; PRIMATES;
                                                                                                                                                                                                                                                                                                                                                       NOMURA N.,
                                                                                                                    ₽.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ,
98
                                                                                                                                                                                                                                                                                      can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12;
```

Thu

Š

protein

.

protein search, using

sw model

Copyright

GenCore version 4.5 (c) 1993 - 1998 Compugen

9 2

мау

Result

ŏ.

Score

Query Match

Length

B

SUMMARIES

NOV_COTJA NOV_MOUSE

NOV_HUMAN

CYR6_HUMAN

CTGE_HUMAN
IBP4_SHEEP
IBP4_HUMAN
IBP3_PIG
IBP5_PIG
IBP5_PIG

IBP4_BOVIN
IBP5_MOUSE
CTGF_MOUSE
IBP5_RAT

124.5 123.5 115.5 114.5 112

IBP3_RAT
LMB2_RAT
TIE1_HUMAN
IBP2_SHEEP
IBP1_HUMAN

113.5 113.5 113.5 113.5 113.5 113.5 113.5 113.5 113.5 113.6 11

IBP3_HUMAN
IBP3_MOUSE
NOV_XENLA

94.5 100 97.5 94.5 87.5 94.5 95.5 95.5 96.5 96.5 98.5 98.5 98.5

LMB2_MOUSE
IBP2_CHICK
IIBP2_CHICK
IIE1_MOUSE
IBP5_BOVIN
LMB1_MOUSE
LMB1_MOUSE
LMB1_HUMAN

Gaps

7;

IBP2_HUMAN
FAT_DROME
CTGF_BOVIN
LMG1_DROME
IBP2_RAT

LMA4_HUMAN

110.5 110.5 1109.5 109.5 109.5 100.5 104.5 103.5 103.5 103.5 103.5 103.5 103.5 103.5 103.5 103.5 103.5 103.5 103.5 103.5

IBP4_MOUSE
IBP4_RAT
CYR6_MOUSE
CTGF_PIG
IBP3_BOVIN

Searched:

SwissProt_36:* 74019 seqs,

26840295 residues

Scoring table:

PAM150

Perfect score: Title:

US-09-037-460-2_COFY_1_163 820

8

દ્વ

B

112 IVERGETPOPSCHTQCTCRD\$ 132

TECHOCARTCHOOS 120

NOV_CO

N

```
RESULT 3
NOV_MOUSE
ID NOV_M
AC 06429
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT
                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches .
                                             NOV_MOUSE
064299;
01-NOV-1997
01-NOV-1997
01-NOV-1997
NOV PROTEIN I
NOV.
MUS MUSCULUS (MOUSE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OV_COTJA
NOV_COTJA
P42642;
01-NOV-1995 (
01-NOV-1995 (
01-OCT-1996 (
                                                                                                                                                                                                                                                                               106 ----TFGMDCRETCNCQSG 120
                                                                                                                                                                                                                                                          115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIGNAL
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL: U13063; G532697;
PROSITE; PS001222; IGF_BINDING;
PROSITE: PS01185; CTCK_L; 1.
PROSITE: PS01225; CTCK_2; 1.
PROSITE: PS01208; VWFC; 1.
                                                                                                                                                                                                                                                                                                                                       69
                                                                                                                                                                                                                                                                                                                                                                            14 LLLLLLLLRPSEV-----NGREAPCPRPCGGRCPAEPPRCAPGVPAVLDGCGCCLVCARQ 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
WEISKIRCHEN R., BISTER K.,
SUBMITTED (AUG-1994) TO EMBL/GENBANK/DDBJ DATA BANKS.
-I- FUNCTION: IMMEDIATE-EARLY PROTEIN LIKELY TO PLAY A ROLE IN CELL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COTURNIX COTURNIX JAPONICA (JAPANESE QUAIL).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; AVES; NEOGNATHAE;
                                                                                                                                                                                                                                                                                                                                                                                                               4 VLLLTTLLVPAHLVAAWSNNYAVDCPQHCDSSECKSSPRCK---RTVLDDCGCCRVCAAG
                                                                                                                                                                                              w
                                                                                                                                                                                                                                       YRNGETFQPSCKYQCTCRDG 134
                                                                                                                                                                                                                                                                                                                                    RGETCYRTYSGMDGMKCGPGLRCQPSNG-----EDPFGEEFGICK----DCPYG--- 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity 32.1
45; Conservative
                          (REL. 35, CREATED)
(REL. 35, LAST SEQUENCE UPDATE)
(REL. 35, LAST ANNOTATION UPDATE)
HOMOLOG PRECURSOR (NOVH).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1
106
260
260
277
277
288
291
296
276
                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (REL. 32, CREATED)
(REL. 32, LAST SEQUENCE UPDATE)
(REL. 34, LAST ANNOTATION UPDATE)
PRECURSOR.
                                                                                                                                                                                                                                                                                                   -----CSPLLPCDESGGLYCDRGPED---GGGTGICMYLEGDNCVFDGMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GROWTH FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17.0%;
32.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  38667 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 139; DB 1; I
Pred. No. 4.4e-08;
4; Mismatches 39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCK.

BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
CAF5928D CRC32;
                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NOV PROTEIN.
VWFC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                  354
                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              353 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 353;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                             7;
```

```
RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOLUTION OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF 
SEQUENCE FROM N.A.
TISSUE-PLACENTA;
MEDLINE; 94336229.
MARTINERIE C., HUFF V., ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local (
                                                                                                                                                                                                                 NOV_HUMAN
P48745;
01-FEB-1996
01-FEB-1996
01-OCT-1996
                                                                                                      HOMO SAPIENS (HUMAN).
EUKARYOTA; METAZOA; C
EUTHERIA; PRIMATES.
                                                                                                                                                                                            NOV PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                            81
                                                                                                                                                                                                                                                                                                                                                                                                                81 LRCQPSNGEDPFGEEFGICK-----DCPYG-----TFGMDCRETCNCQSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                    29 CPSRC-PPKCPSISPTCAPGVRSYLDGCSCCPVCARQRGESC-----SEMRPCDQSSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIGNAL
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE; PS00222; IGE_BINDING; 1.
PROSITE; PS01185; CTCK 1; 1
PROSITE; PS01225; CTCK 2; 1.
PROSITE; PS01208; VMFC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; X97863; E1181580; EMBL; X99257; E281106; EMBL; X96585; E228599; MGD; MGI:109185; NOV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBMITTED (MAY-1996) TO EMBL/GENBAK/DDBJ DATA BANKS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -1- SIMILARITY: CONTAINS 1 VWFC DOMAIN.
-1- SIMILARITY: CONTAINS 1 C-TERMINAL CYSTINE KNOT-LIKE DOMAIN (CTCK).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -!- FUNCTION: IMMEDIATE-EARLY PROTEIN LIKELY TO PLAY A ROLE IN CELL GROWTH REGULATION (BY SIMILARITY).
-!- SIMILARITY: BELONGS TO THE INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN FAMILY. CEF-10/CYR61/CTFG/FISP-12/NOV PROTEIN SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROTO-ONCOGENE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE; 96204003.
MARTINERIE C., CHEVALIER G.
ONCOGENE 12:1479-1492(1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM
STRAIN-C57BL/6
                                                                                                                                                                                                                                                                                                                                                                         LYCORSADPN---NOTGICMVPEGDNCVFDGVIYRNGEKFEPNCQYFCTCRDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        l Similarity
37; Conserv
                                                                                                                                                                                                           HOMOLOG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GROWTH FACTOR B

2 12 354 PO

2 168 VW

1 335 CT

1 298 BY

3 312 BY

3 330 BY

3 34 BY

9 1 PO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CHEVALIER G., RAUSCHER F.J. III, PERBAL B.;
                                                                                                                     CHORDATA;
                                                                                                                                                                                   PRECURSOR
                                                                                                                                                                                     CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15.2%;
32.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                38928 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCK.

BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
POTENTIAL.

W: 6584FF0E CRC32;
                                                                                                  VERTEBRATA; TETRAPODA; MAMMALIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 124.5; DB 1;
Pred. No. 1.6e-06;
8; Mismatches 27;
                                                                                                                                                                                 (NOVH).
                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL.
NOV PROTEIN HOMOLOG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BINDING; SIGNAL.
                                                                                                                                                                                                                                                                                    357
                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 354;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             80
                                                                                                                                                                                                                                                                                                                                                                                                                                                         80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ٩
```

JOUBERT I.,

BADZIOCH M.,

SAUNDERS

G.,

밁

В Ş

Š

```
CCC FLAR X
                                                                                                                                                                                                                                                                                                                                                                                                                         IBP4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SATER TO THE TENT OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPE
SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
SEQUENCE: 9312553.

A MOSER D.R., LOWE W.L. JR., DAKE B.L., BOOTH B.A.
A MOSER D.R., LOWE W.L. JR., DAKE B.L., BOOTH B.A.
CLEMMONS D.R., BAR R.S.;
A CLEMMONS D.R., BAR R.S.;
CLEMMONS D.R., BAR R.S.;
SHOWN TO EITHER INHIBIT OR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -1- SIMILARITY: CONTAINS 1 WARC DOMAIN.
-1- SIMILARITY: CONTAINS 1 C-TERMINAL CY
EMBL; X78351; G825696; JOINED.
EMBL; X78352; G825696; JOINED.
EMBL; X78353; G825696; JOINED.
EMBL; X78354; G825696; JOINED.
EMBL; X78354; G825696; JOINED.
EMBL; X98584; E228691; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ONCOGENE 9:2729-2732(1994).

ONCOGENE 9:2729-2732(1994).

-I- FUNCTION: IMMEDIATE-EARLY PROTEIN LIKELY TO PLAY A ROLE GROWTH REGULATION (BY SIMILARITY).

-I- TISSUE SPECIFICITY: INCREASED EXPRESSION IN WILMS TUMOF STROMAL TYPE.

-I- SIMILARITY: BELONGS TO THE INSULIN-LIKE GROWTH FACTOR PROTEIN FAMILY. CEFT-10/CYR61/CTFG/FISP-12/NOV PROTEIN PROTEIN FAMILY. CONTAINS 1 VMFC DOMAIN.
                                                                                                                                                                                                                                                                                                             IBP4_BOVIN
Q05716;
Q1-FEB-1994
Q1-FEB-1994
Q1-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                       LT 5
                                                                                                                                                                                                                                                                  01-FEB-1994 (REL. 28, CREATED)
01-FEB-1994 (REL. 28, LAST SCOUENCE UPDATE)
01-NOV-1997 (REL. 35, LAST ANNOTATION UPDATE)
INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN 4
(IBP-4) (IGF-BINDING PROTEIN 4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHAIN
DOMAIN
DOMAIN
                                                                                                                                                                                            EUTHERIA;
                                                                                                                                                                                                               EUKARYOTA;
                                                                                                                                                                                                                                                      IGFBP4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE; PS00222; IGF_BINDING; PROSITE; PS01185; CTCK_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROTO-ONCOGENE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE; PS01225; PROSITE; PS01208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18
                                                                                                                                                                                                             TAURUS (BOVINE).
ARYOTA; METAZOA; CHORDATA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PSCKFQCTCRDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MDCRETCNCQSG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GETCYRTVSGMDGMKCGPGLRCQPSNGEDPFGEEFGICK-----DCPYG-----TFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LTTLLVPAHLVA--AWSNNYAVDCPQHCDSSECKSSPRCK---RTVLDDCGCCRVCAAGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LTFLLL--HLLGQVAATQRCPPQCPGRCPA----TPPTCAPGVRAVLDGCSCCLVCARQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                            ARTIODACTYLA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  280
357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28
108
264
264
281
292
295
300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -SDLEPCDESSGLYCDRS--ADP-SNQTGICTAVEGDNCVFDGVIYRSGEKFQ
                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GROWTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; CTCK_1; 1.
; CTCK_2; 1.
; VWFC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27
357
174
338
301
301
3315
3331
3331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    39162 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCK.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 123.5; DB 1
Pred. No. 2.1e-06;
5; Mismatches 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NOV PROTEIN HOMOLOG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POTENTIA
                                                                                                                                                                                                             VERTEBRATA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BINDING;
                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       μ
                           S PROLONG THE HALF-LIFE OF THE IGFS INHIBIT OR STIMULATE THE GROWTH
                                                                                                                                                                                                                                                                                                                                                                                                    258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CYSTINE KNOT-LIKE DOMAIN (CTCK).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIGNAL.
                                                                                                                                                                                                                                                                                                                                                                                                  ₿
                                                                                                                                                                                                             TETRAPODA;
                                                                                                                                                                                                                                                                                            4 PRECURSOR (IGFBP-4)
                                                                                                          B.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ۲:
                                                                                                            BOES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                             MAMMALIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TUMOR
                                                                                                          Ξ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ROLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         357;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CELL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
```

```
STATE TO SERVICE COCC
                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
            EMBL;
                                                                                                                                                                                                                                                                                                   Q07079;
Q07079;
Q1-OCT-1994 (REL. 30, CREATED)
Q1-OCT-1994 (REL. 30, LAST SEQUENCE UPDATE)
Q1-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE)
INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN 5 |
(IEP-5) (IGF-BINDING PROTEIN 5).
                                                                                                                                                                                                                                                                                                                                                                                    LT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
DOMAIN
SEQUENCE
                                                                                                                                                             MEDLINE; 94307727.
KOU K., JENKINS N.A., GILB
GENOMICS 20:412-418(1994).
                                                                                                            MEDLINE; 95121750.
SCHULLER A.G.P., GROFFEN C., VAN NECK J.W.,
                                                                                                                                                                                                                             TISSUE-MYOBLASTS;
MEDLINE; 94042976.
JAMES P.L., JONES S.B.,
                                                                                                                                  TISSUE-KIDNEY;
                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                         TISSUE-SPLEEN
                                                                                                                                                                                                                                                                             EUKARYOTA; METAZOA;
EUTHERIA; RODENTIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GROWTH FACTOR BINDING; SIGNAL;
SIGNAL 1 21 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; S52770; G263304; -. PIR; A45403; A45403.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ++
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROSITE; PS00222; PROSITE; PS00484;
                                                                                                                                                                                                                                                                                                                                                                            IBP5_MOUSE
                                                                                                                                                                                                  EQUENCE FROM N.A.
                                                                                                                                                                                                                                                         EQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                           58
                                                                                                                                                                                                                   MES P.L., JONES S.B., BUSBY W.H. JR.,
BIOL. CHEM. 268:22305-22312(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                              \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MKSVLLLTTLLVPAHLVAAWSNNYAVDCPQHCDS--SECKSSPRCKRTVLD-DCGCCRVC
                                                                                                                                                                                                                                                                                 MUSCULUS (MOUSE),
MUSCULUS (MOUSE),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BINDS IGF-II MORE THE SIMILARITY: BELONGS PROTEIN FAMILY.
        PROTEIN FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROMOTING EFFECTS OF THE IGFS ON CELL CULTURE. THEY ALTER INTERACTION OF IGFS WITH THEIR CELL SURFACE RECEPTORS. BINDS IGF-II MORE THAN IGF-I.
                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGRGETCYRTVSGMDGMKCGPGLRCQPSNGED
                                                                                                                                                                                                                                                                                                                                                                                                                        ALGKGMPC----GVYTPRCGSGLRCYPPRGVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                             MLSICLMAALLLAAGPGPSIGDE-AIHCPPCSEEKLARCRPPVGCEELVREPGCGCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  125
200
258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ă,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IGF_BINDING; 1.
THYROGLOBULIN_1; 1.
DING; SIGNAL; GLYCOPROTEIN.
21
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  125
249
27890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        258
                                                                                                                                                                                                                                                          AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14.18;
                                                                                                                                                                       GILBERT
                                                                                                                                                                                                                                                         PARTIAL SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 115.5; DB 1;
Pred. No. 1.2e-05;
4; Mismatches 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INSULIN-LIKE GROWTH FACTOR PROTEIN 4. POTENTIAL.
THYROGLOBULIN TYPE I.
; 97880748 CRC32;
                                                                                                                                                                      D.J.,
                                                                                                                                                                                                                                                                                     VERTEBRATA; TETRAPODA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INSULIN-LIKE GROWTH
                                                                                                                                                                      COPELAND
                                                                                                                                                                                                                                                                                                                                                                          271
                                                                                                                                                                                                                                                                                                                                                                                                                         87
                                                                                                                                                                                                                                                                                                                                                                                                                                          90
                                                                                                                                                                                                                              CLEMMONS D.R.,
                                                                                                                                                                                                                                                                                                                                                                          A
                                                                                                             ZWARTHOFF E.C.,
                                                                                                                                                                      z
                                                                                                                                                                                                                                                                                                                          PRECURSOR (IGFBP-5)
                                                                                                                                                                      .
G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                      ROTWEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FACTOR BINDING
                                                                                                                                                                                                                                                                                      MAMMALIA
                                                                                                                                                                                                                              ROTWEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      258;
                                                                                                                                                                     ۳.
::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              THE
                                                                                                                                                                                                                             .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               57
```

4;

```
PROSITE: PS01222: IGF BINDING; 1.
PROSITE: PS01185; CTCK_1; 1.
PROSITE: PS01185; CTCK_2; 1.
PROSITE: PS01208; VWEC; 1.
PROSITE: P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; M70641; G193314; --
EMBL; M70642; G193316; --
EMBL; M80263; G201946; --
PIR; A53228; A53228
MGD; MGI:95537; FISP12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; U02025; G437125; -.

EMBL; U02023; G437125; JOINED.

REMBL; U02027; G437125; JOINED.

REMBL; W102024; G437125; JOINED.

REMBL; W81583; G550385; -.

REMBL; W81583; G550385; -.

REMBL; W81584; G158P5.

REMBL; W102022; IGF BINDING; 1.

REMBL; W102024; M125; JOINED.
                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.

MEDILINE: 91229699.

BRUNNER A., CHINN J., NEUBAUER M.G., PURCHIO A.F.;

DNA CELL BIOL. 10:293-300(1991).

'- TISSUE SPECIFICITY: TESTIS, SPLEEN, KIDNEY, LUNG, HEART, AND BRAIN

(LOWEST LEVEL IN TESTIS AND HIGHEST IN LUNG).

'- INDUCTION: BY GROWTH FACTORS.

'- SIMILARITY: BELONGS TO THE INSULIN-LIKE GROWTH FACTOR BINDING

-- SIMILARITY: CONTAINS 1 VACC DOMAIN.

'-- SIMILARITY: CONTAINS 1 C-TERMINAL CYSTINE KNOT-LIKE DOMAIN (CTCK).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGF_MOUSE STANDAKU;

CTGF_MOUSE STANDAKU;

P29268;

01-DEC-1992 (REL. 24, CREATED)

01-DEC-1992 (REL. 24, LAST SEQUENCE UPDATE)

15-UUL-1998 (REL. 36, LAST ANNOTATION UPDATE)

CONNECTIVE TISSUE GROWTH FACTOR PRECURSOR (CTGF) (FISP-12 PROTEIN).

MUS MUSCULUS (MOUSE).

TYPABYOTA: METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; MAMMALIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
MEDLINE; 91363290.
RYSECK R.-P., MACDONA
CELL GROWTH DIFFER. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q 4 VLLLTTLLVPAHLVAAWSNNYAVDCPQHCDSSECKSSPRCKRTVLD------DCGCCRV 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAGRGETCYRTVSGMDGMKCGPGLRCQPSNGED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CALAEGOSC-----GVYTERCAOGLECLPRODEE 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LLLLAAYAVPAQGLGSFV------HCEPCDEKALSMCPPSPLGCELVKEPGCGCCMT 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        l Similarity
27; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       271 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MACDONALD-BRAVO Н., МА
IFFER. 2:225-233(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   214
112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14.0%;
28.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30372
    POTENTIAL.
CONNECTIVE 1
VWFC.
CTCK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 114.5; DB 1;
Pred. No. 1.6e-05;
0; Mismatches 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      THYROGLOBULIN TYPE I MISSING (IN REF. 2). 12DC64CA CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MATTEI M.-G., BRAVO R.;
                                       TISSUE GROWTH FACTOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω,
```

```
ALD DE RESERVE DE RESERVE DE COCOCOCOCOCE RESERVE RESERVE DE RESER
         Query Match 13.5
Best Local Similarity 28.7
Matches 27; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
IBP5_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFFIE
                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; M62781; G204746; EMBL; M62781; G204746; EMBL; L08275; E7333; PIR; A40403; A40403 A40403; P1R; F40403; F4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                 DOMAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE; 93176146.

ZHU X., LING N., SHIMASAKI S.;
BIOCHEM. BIOPHYS. RES. COMMUN. 190:1045-1052(1993).

-!- FUNCTION: IGF-BINDING PROTEINS PROLONG THE HALF-LIFE OF THE IGFS AND HAVE BEEN SHOWN TO EITHER INHEIT OR STIMULATE THE GROWTH PROMOTING EFFECTS OF THE IGFS ON CELL CULTURE. THEY ALTER THE INTERACTION OF IGFS WITH THEIR CELL SURFACE RECEPTORS.

-!- TISSUE SPECIFICITY: MOSTLY IN KIDNEY.

-!- SIMILARITY: BELONGS TO THE INSULIN-LIKE GROWTH FACTOR BINDING
                                                                                                                                                                                                                                                                                                         SIGNAL
                                                                                                                                                                                                                                                                                                                                  PROSITE; PS00222; IGF_BINDING; 1.
PROSITE; PS00484; THYROGLOBULIN_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IBP5_RAT STANDARD; PRT; 271 AA.

P24594;
01-MAR-1992 (REL. 21, CREATED)
01-MAR-1992 (REL. 21, LAST SEQUENCE UPDATE)
01-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE)
INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN 5 PRECURSOR (IGFBP-5)
(IBP-5) (IGF-BINDING PROTEIN 5).
IGFBP5 OR IGFBP-5.
RATTUS NORVEGICUS (RAT).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; MAMMALIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SHIMARAKI S., SHIMONAKA M., ZHANG H.-P.,
J., BIOL. CHEM. 266:10646-10653(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-SPRAGUE-DAWLEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE; 91244847.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                         TE; FSUCTOR BINDING; S
AL 1 19
N 20 271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                82 RCQPSNGEDFFGEEFGICKD-----CPYG-----TFGMDCRETCNCQSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27 DCPQHCDSSECKSSPRCK---RTVLDDCGCCRVCAAGRGETCYRTVSGMDGMKCGP--GL 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FCDFGS----PANRKIGVCTAKDGAPCVFGGSVYRSGESFQSSCKYQCTCLDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DCSAQCQCAA-EAAPHCPAGVSLVLDGCGCCRVCAKQLGELC-----TERDPCDPHKGL
                                                                                                                                                                       214
271 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               255
272
283
286
286
291
161
348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               æ
                                                                                                                                                                       262
30298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         292
306
322
324
328
3161
37793
                                            13.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AND SEQUENCE OF
                                                                                                                                                                                                                                                                                                                         SIGNAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13.7%;
                                                                                                                                                                    WW;
Score 110.5; DB 1;
Pred. No. 4.2e-05;
0; Mismatches 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            , WM
                                                                                                                                                       THYROGLOBULIN TYPE OAA79506 CRC32;
                                                                                                                                                                                                          POTENTIAL.
INSULIN-LIKE GROWTH FACTOR
PROTEIN 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           b; Score 112; DB
b; Pred. No. 3.5e
15; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
K -> E (IN REF. 2).
W; EAB92BEO CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20-53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1;
.5e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRECURSOR (IGFBP-5)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 348;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                          BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7;
```

20;

DB 1;

271; 21;

Indels Length

Gaps

ښ

TAVIAUX S.,

NITSCH

ж ж .

```
RESULT
CYR6_HU
ID CY
AC OO
DT 15
DT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                              A TERRET TO DESCRIPTION OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE
                                                                                                                                                     유
                                                                                                                                                                                δ
                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                        Matophes
                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -!- SIMILARIII.
EMBL; J04496; G211436; -
PIR; A41428; A41448
PROSITE; PS00222; IGF_BINDING; 1.
PROSITE; PS01185; CTCK_1; 1.
PROSITE; PS01225; CTCK_2; 1.
PROSITE; PS01208; VWFC; 1.
PROSITE; PS01208; VWFC; 1.
                                                                              _HUMAN
CYR6_HUMAN STANDARD; PRT; 000622; 014934; 15-JUL-1998 (REL. 36, CREATED) 15-JUL-1998 (REL. 36, LAST SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID DISULFID DISULFID DISULFID SEQUENCE
                                                                                                                                                     113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        - PUNCTION: PROBABLE SECRETED REGULATORY PROTEIN.
-- INDUCTION: BY V-SRC.
-- INDUCTION: BY V-SRC.
-- SIMILARITY: BELONGS TO THE INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN FAMILY. CEF-10/CYR61/CTFG/FISP-12/NOV PROTEIN SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1990 (REL. 16, CREATED)
01-NOV-1990 (REL. 16, LAST SEQUENCE UPDATE)
01-OCT-1996 (REL. 34, LAST SEQUENCE UPDATE)
CEF-10 PROTEIN PRECURSOR.
GALLUS GALLUS (CHICKEN).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; AVES; NEOGNATHAE;
                                                                                                                                                                                    107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -!- SIMILARITY: CONTAINS 1 CHERMINAL CYSTINE KNOT-LIKE DOMAIN (CTCK)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMMONS D.L., LEVY D.B., YANNONI Y., ERIKSON R.L.; PROC. NATL. ACAD. SCI. U.S.A. 86:1178-1182(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A. MEDLINE; 89145206.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P19336;
01-NOV-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CE10_CHICK
                                                                                                                                                                                                                       62
                                                                                                                                                                                                                                                      63
                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                        10
                                                                                                                                                                                                                                                                                                                          σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             57
                                                                                                                                            FQPNCKHQCTCIDG 126
                                                                                                                                                                                                                                                                                                        LLTTLLVPAHLVAAWSNNYAVDCPQHCDSSECKSSPRCKRT---VLDDCGCCRVCAAGRG
                                                                                                                                                                                FGMDCRETCNCQSG 120
                                                                                                                                                                                                                                       ETCYRTVSGMDGMKCGP--GLRCQPSNGEDPFGEEFGICKD-----CPYG-----T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4
                                                                                                                                                                                                      EDCSRTQP-----CDHTKGLEC--NFGASPAATN-GICRAQSEGRPCEYNSKIYQNGES
                                                                                                                                                                                                                                                                         LAAALLCLARLALGSP-----CPAVCQCPA--AAPQCAPGVGLVPDGCGCCKVCAKQLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LLLLAACAVPAQGLGSFV---
                                                                                                                                                                                                                                                                                                                                                           39;
                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1
23
98
281
281
298
309
312
                                                                                                                                                                                                                                                                                                                                                                                                                                            ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                        40651
                                                                                                                                                                                                                                                                                                                                                                    13.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                        MW;
                                                                                                                                                                                                                                                                                                                                                    19;
                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCK.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                 Score 111; DB 1;
Pred. No. 4.7e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CEF-10 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HCEPCDEKALSMCPPSPLGCELVKEPGCGCCMT 57
                                                       381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              375
                                                       A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                   40;
                                                                                                                                                                                                                                                                                                                                                                               Length 375;
                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                             36;
                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                         106
                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                           62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  56
                                                                                                                                                                                                                                                                                                                                           9
                                         Ş
                                                                              밁
                                                                                                           ğ
                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                              Ş
                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                  DISULFID DISULFID DISULFID DISULFID DISULFID CONFLICT CONFLICT CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROSITE;
                                     106 --- TFGMDCRETCNCQSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GROWTH FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BI A.B., YU L.;
SUBMITTED (NOV-1997) TO EMBL/GENBANK/DDBJ DATA BANKS.
-!- FUNCTION: MAY ACT AS ONE OF THE MANY GROWTH FACTOR-BINDING PROTEINS; PROMOTES PROLIFERATION, MIGRATION AND ADHESION ()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AF003594; G2196782; -. EMBL; AF031385; G2606094; -. MIM; 602369; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY).

-!- SIMILARITY: BELONGS TO THE INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN FAMILY. CEF-10/CYR61/CTFG/FISP-12/NOV PROTEIN SUBFAMILY.

-!- SIMILARITY: CONTAINS 1 VWFC DOMAIN.

-!- SIMILARITY: CONTAINS 1 C-TERMINAL CYSTINE KNOT-LIKE DOMAIN (CTCK).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; Y12084;
EMBL; U62015;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. BI A.B., YU L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BINDING PROTEIN 10).
CYR61 OR GIG1 OR IGFBP10.
HOMO SAPIENS (HUMAN).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; MAMMALIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KOLESNIKOVA T.V., LAU L.F.;
SUBMITTED (JUN-1997) TO EMBL/GENBANK/DDBJ DATA BANKS.
                                                                            58
                                                                                                              59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
ALBRECHT C., VON DER
SUBMITTED (JUN-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FISSUE-PLACENTA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ONCOGENE 14:1753-1757(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A. MEDLINE; 97280750.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15-JUL-1998 (REL. 36, LAST ANNOTATION UPDATE)
CYR61 PROTEIN PRECURSOR (GIG1 PROTEIN) (INSULIN-LIKE GROWTH FACTOR-
                                                                                                                                                                  2 KSVLLLTTLLVPAHLVAAWSNNYAVDCPOHCDSSECKSSPRCKRT---VLDDCGCCRVCA
     NGESFQPNCKHQCTCIDG
                                                                                   AGRGETCYRTVSGMDGMKCGP--GLRCQPSNGEDPFGEEFGICKD-----CPYG-----
                                                              KQLNEDCSKTQP-----CDHTKGLECNFGASSTALK---GICRAQSEGRPCEYNSRIYQ
                                                                                                                                RALALVVTLLHLTRLALS-----TCPAACHCP--LEAPKCAPGVGLVRDGCGCCKVCA 57
                                                                                                                                                                                                                  36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ); PS00222; IGE_BINDING; 1
3; PS01185; CTCK_1; 1.
2; PS01225; CTCK_2; 1.
2; PS01208; VMFC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BERGE-LEFRANC J.L., MARSOLLIER C., MEJEAN C.,
                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BINDING;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                G2130527;
                                                                                                                                                                                                                                                                                                  42026 MW;
                                                                                                                                                                                                      13.5%; Score 110.5; DB 1
26.1%; Pred. No. 5.4e-05;
tive 21; Mismatches 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KAMMER H., KLAUDINY J., MAYHAUS M., TO EMBL/GENBANK/DDBJ DATA BANKS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIGNAL.
                                                                                                                                                                                                                                                                                                           BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
L -> I (IN REF.
L -> R (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CYR61 PROTEIN
                                                                                                                                                                                                                                                                                         -> I (IN REF. 4).
-> R (IN REF. 4).
2B091D9E CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     POTENTIAL.
                                                                                                                                                                                                                                         1;
```

Indels Length

Gaps

8

58

381; 37;

```
밁
                          δÃ
                                                Query Match
Best Local S
Matches 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                       DOMAIN
SEQUENCE
                                                                                                                                                     GROWTH
SIGNAL
                                                                                                                                                                                                              PIR;
                                                                                                                                                                                                                        PIR;
                                                                                                                                                                                                                                              EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-MAR-1992 (REL. 21, CREATED)
01-MAR-1992 (REL. 21, LAST SEQUENCE UPDATE)
01-CCT-1996 (REL. 34, LAST ANNOTATION UPDATE)
INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN 5 (IBP-5) (IGF-BINDING PROTEIN 5).
IGEBP5 OR IBP5.
HOMO SAPTEMA
                                                                                                                                                                                                    Mam;
                                                                                                                                                                                                                                                                                                                                                                                               -! - FUNC
                                                                                                                                                                            PROSITE;
                                                                                                                                                                                                                                                                                                                              -
                                                                                                                                                                                                                                                                                                                                                   -
                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OF 24-43.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALLANDER S.V., LARSSON C., EHRENBORG E., MORRIS S.L., BAJALICA S., KIEFER M.C., L. BIOL. CHEM. 269:10891-10898(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE; 91244847.
SHIMASAKI S., SHIM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE; 91207396.
KIEFER M.C., IOH R.S.,
BIOCHEM. BIOPHYS. RES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HOMO SAPIENS (HUMAN).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; TETRAPODA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _HUMAN
IBP5_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                  ANDRESS D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE-PLACENTA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE=OSTEOSARCOMA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EUTHERIA; PRIMATES
       æ
                          4
                                                                                                                                                                                                                                                                                                                                          RESS D.L., BIRNBAUM R.S.;

CHEM. BIOPHYS. RES. COMMUN. 176:213-218(1991).

FUNCTION: IGF-BINDING PROTEINS PROJONG THE HALF-LIFE OF THE IGHT OF THE HALF-LIFE OF THE IGHT OF STIMULATE THE GROWTH AND HAVE BEEN SHOWN TO EITHER INHIBIT OR STIMULATE THE GROWTH PROMOTING EFFECTS OF THE IGFS ON CELL CULTURE. THEY ALTER THE INTERACTION OF IGFS WITH THEIR CELL SURFACE RECEPTORS.

TISSUE SPECIFICITY: OSTEOSARCOMA, AND AT LOWER LEVELS IN LIVER PRAYER AND BAT LOWER LEVELS IN LIVER
                                                                                                                                                                                                                                                                                                                      KIDNEY, AND BRAIN.
SIMILARITY: BELONGS TO THE INSULIN-LIKE GROWTH FACTOR BINDING
                                                                                                                                                                                                                                .; M65062; G184820; -...; M62782; G184818; -...; L27559; G505589; JOINED.
.; L27557; G505589; JOINED.
.; L27558; G505589; JOINED.
.; L27558; G505589; JOINED.
.; L37558; JH0391.
                                                                                                                                                                                                                                                                                                                PROTEIN FAMILY
                    VLLLTTLLVPAHLVAAWSNNYAVDCPQHCDSSECKSSPRCKRTVLD-----DCGCCRV
                                                                                                                                                                                                                       JH0391; JH0391.
В40403; В40403.
    LLLLAAYAGPAQSLGSFV--
                                                                                                                                                                                                            PH0143; PH0143.
                                                                                                                                                     FACTOR BINDING; SIGNAL.

1 20 F
                                                           Similarity
                                                                                                                                                                      PS00222; IGF_BINDING; 1.
PS00484; THYROGLOBULIN_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94193798.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHEM.
                                                                                                                                                                                                                                                                                                                                                                                                                              91207395.
                                                                                                       215
272
                                                Conservative
                                                                                                                                        21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SHIMONAKA M., ZHANG H.-
. 266:10646-10653(1991).
                                                                                                        AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                       263
30570
                                                                                                                                        20
272
                                                         13.48; 27.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMUN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BAUER
                                                                                                      MW;
                                              20;
                                             Score 109.5;
Pred. No. 5.4e
20; Mismatches
                                                                                                    THYROGLOBULIN TYPE 3A6AEEF2 CRC32;
                                                                                                                            INSULIN-LIKE GROWTH FACTOR PROTEIN 5.
                                                                                                                                                  POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 D.M., ZAPF J.;
N. 176:219-225(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
HCEPCDEKALSMCPPSPLGCELVKEPGCGCCMT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         н.-Р.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ., SUWANICHKUL A., WEBER G., LUTHMAN H., POWELL D.R.;
                                             5; DB 1;
5.4e-05;
hes 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRECURSOR (IGFBP-5)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Z
                                             Indels
                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MAMMALIA.
                                                                                                                                      BINDING
                                                                   272;
                                                                                                                                                                                                                                                                                                                                             IN LIVER
                                           21;
                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                           IGFS
                     56
```

```
TAGE CONSTRUCTION OF A STRUCTION OF 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
CTGF_H
      Query Match
Best Local S
Matches 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-DEC-1992 (REL. 2
01-DEC-1992 (REL. 2
15-JUL-1998 (REL. 3
CONNECTIVE TISSUE C
                                                                                                                           CARBOHYD
VARSPLIC
                                                                                                                                                                    CHAIN
DOMAIN
DOMAIN
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORMAR B.S., WERNER A., YANG 2., GARNIER J.M., GENTZ R., LUESCHER T.F.
SUBMITTED (APR-1994) TO EMBL/GENBANK/DDBJ DATA BANKS.

11- FUNCTION: MAJOR CONNECTIVE TISSUE MITOATTRACTANT SECRETED BY
HUMAN VASCULAR ENDOTHELIAL CELLS. THIS IMMEDIATE-EARLY PROTEIN
MAY BIND ONE OF THE PDGF CELL SURFACE RECEPTORS.

11- SUBUNIT: MONOMER.
11- SUBUNIT: MONOMER.
11- ALTERNATIVE PRODUCTS: A SHORTER FORM MAY BE PRODUCED BY
ALTERNATIVE SPLICING OF THE SAME GENE.
11- ALTERNATIVE SPLICING OF THE INSULIN-LIKE GROWTH FACTOR BINDING
PROTEIN FAMILY. CEP-10/CYR61/CTFG/FISP-12/NOV PROTEIN SUBFAMILY.

11- SIMILARITY: CONTAINS 1 VMFC DOMAIN.

11- SIMILARITY: CONTAINS 1 C-TERMINAL CYSTINE KNOT-LIKE DOMAIN (CTCK)
                                                                                                                                                                                                                                                                                                                                                          GROWTH
SIGNAL
                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                            PROSITE; PS00222; IGF_BINDING; PROSITE; PS01185; CTCK_1; 1. PROSITE; PS01225; CTCK_2; 1. PROSITE; PS01208; VWEC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIR; A40551; A40551.
PIR; S44205; S44205.
MIM; 121009; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; M92934; G180924; -. EMBL; X78947; G474934; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGF_HUMAN
P29279;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOMO SAPIENS (HUMAN).
HOMO SAPIENS (HUMAN).
TITKARYOTA: METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; MAMMALIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE; 93187114.
IGARASHI A., BRADE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
TISSUE-UMBILICAL VEIN ENDOTHELIAL CELLS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BRADHAM D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
TISSUE-UMBILICAL VEIN
MEDLINE; 91373462.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ARASHI A., BRADHAM D.M., OKOCHI H., DERMATOL. 19:642-643(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CALAEGOSC-----GVYTERCAOGLRCLPRODEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAGRGETCYRTVSGMDGMKCGPGLRCQPSNGED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BIOL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Χ.
                                                                                                        349
                                                                                                                              1
27
101
256
256
273
273
284
292
292
172
  13.3%;
llarity 30.4%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BRADHAM D.M.,
                                                                                                                                                                                                                                                                                                                                                                         BINDING
                                                                                                        Ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 114:1285-1294(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IGARASHI A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             36,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GROWTH
                                                                                                                                                 349
167
330
293
307
323
325
329
225
                                                                                                        38069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CREATED)
LAST SEQUENCE UPDATE)
LAST ANNOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ENDOTHELIAL
                                                                                                                                                                                                                                                                                                                                                                           SIGNAL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FACTOR
                                                                                                        ₩,
                                                                                                VWFC.
CTCK.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
C21E9662 CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POTTER R.L.,
Score 109; DI
Pred. No. 7.36
4; Mismatches
                                                                                                                                                                                                                                                                                                                                  CONNECTIVE TISSUE GROWTH FACTOR
                                                                                                                                                                                                                                                                                                                                                          POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                       ALTERNATIVE SPLICING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CELLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CYSTINE KNOT-LIKE DOMAIN (CTCK)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GROTENDORST
                   DB 1;
.3e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GROTENDORST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             æ
                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           G.R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     മ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LUESCHER T.F.;
```

Ş

27

Similarity

DCPQHCDSSECKSSPRCK---RTVLDDCGCCRVCAAGRGETCYRTVSGMDGMKCGP--GL

36;

Indels

28;

Gaps 81

7;

```
RAX PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PR
                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                            P22692;
P22692;
P22692;
O1-AUG-1991 (REL. 19, CREATED)
O1-MAR-1992 (REL. 21, LAST SEQUENCE UPDATE)
O1-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE)
INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN 4 PRECURSOR (IGFBP-4)
(IGF-BINDING PROTEIN 4).
IGFBP4 OR IB94.
IGFBP4 OR IB94.
IGFBP4 OR IB94.
           SEQUENCE FROM N.A.
MEDLINE; 91186988.
LATOUR D., MOHAN S.,
                                                                                                                                                                                                                                                                                                                                _HUMAN
IBP4_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE; PS00222; IGF_BINDING; 1.
PROSITE; PS00484; THYROGLOBULIN 1; 1.
GROWTH FACTOR BINDING; GLYCOPROTEIN.
DOMAIN 179 228 THYROGLO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-NOV-1997 (I
01-NOV-1997 (I
INSULIN-LIKE (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OVIS ARIES (SHEEP).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; TETRAPODA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IBP4_SHEEP
Q28893;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARR J.M., GRANT P.A., WALTON P.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          _SHEEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EUTHERIA; ARTIODACTYLA
                                                                                                                                                                                                                                                                                                                                                                                                                                               58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IGFBP4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25 AVDCPQHCDS--SECKSSPRCKRTVLD-DCGCCRVCAAGRGETCYRTVSGMDGMKCGPGL 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOL. ENDOCRINOL. 13:219-236(1994).

FUNCTION: IGF-BINDING PROTEINS PROLONG THE HALF-LIFE OF THE IGAND HAVE BEEN SHOWN TO EITHER INHIBIT OR STIMULATE THE GROWTH PROMOTING EFFECTS OF THE IGFS ON CELL CULTURE. THEY ALTER THE INTERACTION OF IGFS WITH THEIR CELL SURFACE RECEPTORS.

SIMILARITY: BELONGS TO THE INSULIN-LIKE GROWTH FACTOR BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ISSUE=LIVER;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RCQPSNGED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AIHCPPCSEEKLARCRPPVGCEELVREPGCGCCATCALGKGMPC-----GVYTPDCGSGL
                                                                                                                                                                                                                                                                                                                                                                                                                                             RCHPPRGVE 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FCDFGS----PANRKIGVCTAKDGAPCIFGGTVYRSGESFQSSCKYQCTCLDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RCQPSNGEDPFGEEFGICKD-----CPYG-----TFGMDCRETCNCQSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   95151165.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     104
237 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (REL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (REL. 35, CREATED)
(REL. 35, LAST SEQUENCE UPDATE)
(REL. 35, LAST ANNOTATION UPDATE)
GROWTH FACTOR BINDING PROTEIN
PROTEIN 4).
                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       G944952; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                104 P
25869 MW;
         LINKHART T.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FRANCIS G.L., OWENS J.A., WALLACE J.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 107; DB 1; Pred. No. 9.1e-05; 3; Mismatches 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL.
; C1C79FEA CRC32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      THYROGLOBULIN TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
    BAYLINK D.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROTEIN 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (IGFBP-4) (IBP-4)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 237;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>;</u>
  STRONG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MAMMALIA;
D.D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ,.
00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IGFS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ψ
```

```
RESULT .
IBP3_PIG
ID IBP3_PIG
P166I1;
           Barrar
                                                                                                                                          Ş
                                                                                                                                                                  밁
                                                                                                                        멂
                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                    Query Match
       01-AUG-1990 (
01-FEB-1991 ()
01-FEB-1996 ()
                                                                                                                                                                                                                                                                    CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                      CARBOHYD
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; M38177; -; NOT_ANNOTATED_CDS.

EMBL; W62403; G184816; -.

EMBL; U20982; G695254; -.

PIR; A35449; A36549.

PIR; B37252; B37252.

PIR; B37252; B39842.
                                                                                                                                                                                                                                                                                                                                          PROSITE; PS00222; IGF BINDING; 1.
PROSITE; PS00484; THYROGLOBULIN 1; 1.
GROWTH FACTOR BINDING; SIGNAL; GLYCOPROTEIN.
SIGNAL 1 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
TISSUE-PLACENTA;
STRONG D.D., MORALES S
BAYLINK D.J., MOHAN S.
                                                                                                                                                                                                                                                                                                                                        CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CULOUSCOU J.-M., SHOYAB M.;
CANCER RES. 51:2813-2819(1991).
-!- FUNCTION: IGF-BINDING PROTEINS PROLONG THE HALF-LIFE OF THE IGFS AND HAVE BEEN SHOWN TO EITHER INHIBIT OR STIMULATE THE GROWTH PROMOTING EFFECTS OF THE IGFS ON CELL CULTURE. THEY ALTER THE INTERACTION OF IGFS WITH THEIR CELL SURFACE RECEPTORS.
-!- BINDS IGF-II MORE THAN IGF-I.
-!- SIMILARITY: BELONGS TO THE INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 22-53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE-OSTEOSARCOMA;
MEDLINE; 91225006.
KIEFER M.C., MASIARZ F.R., BAUER D.M.,
J. BIOL. CHEM. 266:9043-9049(1991).
                                                                                                                     65
                                                                                                                                    63 ETCYRTVSGMDGMKCGPGLRCQPSNGED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBMITTED (FEB-1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE; 91133415.
SHIMASAKI S., UCHI
                                                                                                                                                                                                                        Local
                                                                                                                                                                  σ
                                                                                                                                                                                        σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE-PLACENTA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOL. ENDOCRINOL. 4:1806-1814(1990)
                                                                                                               MPC----GVYTPRCGSGLRCYPPRGVE
                                                                                                                                                                          LLTTLLVPAHLVAAWSNNYAVDCPOHCDS--SECKSSPRCKRTVLD-DCGCCRVCAAGRG 62
                                                                                                                                                      LVAALLLAAGPGPSLGDE-AIHCPPCSEEKLARCRPPVGCEELVREPGCGCCATCALGLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ASAKI S., UCHIYAMA F., SHIMONAKA M., ENDOCRINOL. 4:1451-1458(1990).
                                                                                                                                                                                                                       Similarity
(REL. 15, CREATED)
(REL. 17, LAST SEQUENCE UPDATE)
(REL. 33, LAST ANNOTATION UPDATE)
3 GROWTH FACTOR BINDING PROTEIN 3
                                                                                                                                                                                                        13.0%;
illarity 31.8%;
Conservative 2:
                                                                                                                                                                                                                                                                                                   200
                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   UCHIYAMA F.,
                                                                                                                                                                                                                                                                 27934 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              s.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL/GENBANK/DDBJ DATA BANKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LEE K., BOONYARATANAKORNKIT V.,
                                                                                                                                                                                                        22;
                                                                                                                                                                                                                                                         INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN 4.
POTENTIA.
THYROGLOBULIN TYPE I.
P -> A (IN REF. 1, 4 AND 5).
I -> F (IN REF. 1 AND 4).
MW; 58AC8AC3 CRC32;
                                                                                                                                                                                                      Score 106.5; DB 1;
Pred. No. 0.00011;
2; Mismatches 29;
                                                            PRT;
                                                                                                                87
                                                                                                                                      90
                                                         266
                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZAPF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   z
                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                            258;
                                                                                                                                                                                                    9;
                                                                                                                                                                                                 Gaps
                                                                                                                                                       2
```

PROTEIN 3 (IGFBP-3) (IBP-3) (IGF

4;

```
밁
                                                            δÃ
                                                                                                                                 밁
                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                               SOLUTION OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE ST
                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 26; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROTEIN FAMILY.

EMBL; J05228; G164501; -.

PIR; A35037; A35037

PIR; JH0516; JH0516

HSSP; P17494; 1KST.

PROSITE; PS00222; IGF_BINDING; 1.

PROSITE; PS00484; THYROGLOBULIN_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GROWTH FACTOR
CARBOHYD 9
CARBOHYD 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 1-15.

SEQUENCE OF 1-15.

SEQUENCE OF 1-15.

SEQUENCE OF 1-15.

COLEMAN M.E., PAN Y.-C.E., ETHERTON T.D.;

BIOCHEM. BIOPHYS. RES. COMMUN. 181:131-1136(1991).

FIT FUNCTION: IGF-BINDING PROTEINS PROLONG THE HALF-LIFE OF THE IGFS AND HAVE BEEN SHOWN TO EITHER INHIBIT OR STIMULATE THE GROWTH PROMOTING EFFECTS OF THE IGFS ON CELL CULTURE. THEY ALTIER THE INTERACTION OF IGFS WITH THEIR CELL SURFACE RECEPTORS.

SUBUNIT: FORMS A TERNARY COMPLEX OF ABOUT 140 TO 150 KD WITH IGF-I OR IGF-II AND A 85 KD GLYCOPPOTEIN (ALS).

BINDS IGF-II AND A 85 KD GLYCOPPOTEIN (ALS).

SUBCELLULAR LOCATION: EXTRACELLULAR.

SIMULARITY: BELONGS TO THE INSULIN-LIKE GROWTH FACTOR BINDING DEDOTRON EARLY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
MEDLINE; 90130475.
SHIMASAKI S., SHIMONAKA M., UI M., INOUYE S., SHIBATA F., LING N.;
J., BIOL. CHEM. 265:2198-2202(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BINDING PROTEIN 3).
IGFBP3.
SCROFA (PIG).
EUKARYOTA; METAZOA; CHORDATA; VERTEBRATA; TETRAPODA; MAMMALIA;
EUTHERIA; ARTIODACTYLA.
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
31 HCDSSECK-----SPRCKRTVLD-DCGCCRVCAAGRGETCYRTVSGMDGMKCGPG 80 :|:::: ::| | : :||:|
                                                                                                                                 12
                                                                                                                  RCEPCDARALAQCAPPPAAPPCAELVREPGCGCCLTCALREGQAC-----GVYTERCGAG 66
                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                         266 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                           91
111
174
211
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BINDING; GLYCOPROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                     91
111
174
260
                                                                                                                                                                                                                                                                                                                                                                                                     28910 MW;
                                                                                                                                                                                                                                       12.7%; Score 104.5; DB 1; 31.3%; Pred. No. 0.00018; tive 18; Mismatches 20;
                                                                                                                                                                                                                                                                                                                                                                                            POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
THYROGLOBULIN TYPE I.
TG -> A (IN REF. 2).
W; 53E9830D CRC32;
                                                                                                                                                                                                                                                                                                   Length 266;
                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                          19;
                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                       4.
```

Search completed: May Job time: 4001 sec

1999, 16:05:42

8

protein

•

protein search, using sw

Run

9 :

Мау

```
No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MKSVLLLTTLLVPAHLVAAW.....EVVKENAAGSPVMRKWLNPR 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 4.5
Copyright (c) 1993 - 1998 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3, 1999, 16:59:55; Search time 13.05 Seconds (without alignments) 528.176 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      37460341 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
                            protein-tyrosine k
laminin beta-1 cha
laminin alpha-4 ch
laminin beta-2 cha
laminin beta-1 cha
laminin beta-1 cha
                                                                                                                                                                                                                    insulin-like growt insulin-like growt insulin-like growt insulin-like growt insulin-like growt insulin-like growt insulin-like growt insulin-like growt insulin-like growt insulin-like growt insulin-like growt insulin-like growt insulin-like growt insulin-like growt insulin-like growt insulin-like growt cysteine-rich protlaminin beta-2 cha protein-tyrosine k
                                                                                                                     transglutaminase s
protein-tyrosine k
insulin-like growt
insulin-like growt
                                                                                                                                                                     insulin-like growt
insulin-like growt
insulin-like growt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CEF-10 protein pre
insulin-like growt
connective tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          beta IG-M2 protein
fisp-12 protein pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            insulin-like growt insulin-like growt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NOV protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hvou
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          in-like growt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein
                                                                                                                                                                       gene novH protein - human
C;Species: Homo sapiens (man)
C;Date: 17-May-1996 #sequence_revision 17-May-1996 #text_change 28-Feb-1997
C;Accession: I38069
C;Accession: I38069
R;Martinerie, C; Huff, V; Joubert, I.; Badzioch, M.; Saunders, G.; Strong, L.; Perb Oncogene 9, 2729-2732, 1994
A;Title: Structural analysis of the human nov proto-oncogene and expression in Wilms A;Reference number: I38069; MUID:94336229
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Residues: 1-357 <RES>
A;Residues: 1-357 <RES>
A;Residues: 1-357 <RES>
                                                                                                      A; Introns: 28/3; 104/1; 188/1; 259/3
                                                                                                                                              m; restaues: 1-357 <RES>
A; Cross-references: EMBL: X78351; NID: g587422; PID: g825696
C; Genetics:
                                                                                                                                 A; Gene: novH
                                                                                                                                                                                                                                                                                                                                                                                             RESULT
                       Query Match
Best Local S
Matches 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ᄝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      뭥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Species: Gallus gallus (chicken)
C;Date: 19-Feb-1994 #sequence_revision 10-Nov-1995 #text_change 10-Sep-1997
C;Accession: S20078
R;JOllot, V.; Martinerie, C.; Dambrine, G.; Plassiart, G.; Brisac, M.; Crochet, J.;
Mol. Cell. Biol. 12, 10-21, 1992
A;Title: Proviral rearrangements and overexpression of a new cellular gene (nov) in A;Reference number: S20078; MUID:92107157
A;Status: preliminary
A;Status: preliminary
A;Status: preliminary
A;Molecusion: S20078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: EMBL:X59284; NID:g63702; PID:g63703
C;Genetics:
A;Gene: NOV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: mRNA
A; Residues: 1-351 <JOL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
S20078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NOV protein - chicken
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       442444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         106 ----TFGMDCRETCNCQSG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  66 QRGES-----CSPLLPCDESGGLYCDRGPED--GGGAGICMVLEGDNCVFDGM 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60 GRGETCYRTYSGMDGMKCGPGLRCQPSNG-----EDPFGEEFGICK-----DCPYG-- 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                         IYRNGETFQPSCKYQCTCRDG 132
                       l Similarity
42; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84
4
4
4
8
4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .5.5
.5.5
.5.5
.5.5
.5.5
                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10.2
9.8
9.2
9.2
9.2
                                  13.5%;
31.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5147
1639
282
304
305
305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15.4%; Score 141.5; DB 2; 31.9%; Pred. No. 2.5e-08; tive 17; Mismatches 38;
              Score 123.5; DB 2;
Pred. No. 2.4e-06;
5; Mismatches 34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IJFFTM
MMFFB2
S50031
A33274
I48601
JN0508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ALIGNMENTS
                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cadherin-related t
laminin gamma-1 ch
prostacyclin-stimu
insulin-like growt
insulin-like growt
insulin-like growt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 351;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
```

7;

Result No.

Score

Query Match

Length

DB

141.5 123.5 115.5 114.5 112 112 110.5

111 109.5 109 109

Pred. No.

is

106.5 106.5 104.5 104.5 103.5 103.5 103.5 103.5 101.5 101.5

\$20078 \$138069 \$A45403 \$A45403 \$A405278 \$A532278 \$A532288 \$A53748 \$A53748 \$A53748 \$A53748 \$A55748 \$A55748 \$A55669 \$10403

98 101.5 97 97.5 90.5 87.5 94.5 94.5 94.5 94.5 92.5 92.5

Ş

7 LTTLLVPAHLYA--AWSNNYAVDCPQHCDSSECKSSPRCK---RTVLDDCGCCRVCAAGR 61

Indels

31;

Gaps

9

Searched: Scoring table:

PAM150

PIR_58:*

pir1:*
pir2:*
pir3:*
pir4:*

116738 seqs,

Sequence:

Perfect score: Title:

US-09-037-460-2 918 1 MKSVLLLTTLLVP,

```
insulin-like growth factor binding protein 5 precursor - mouse C:Species: Mus musculus (house mouse) C:Species: Mus musculus (house mouse) C:Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 10-Sep-1997 C:Accession: 148604; A48699; A54259 C:Accession: 148604; A48699; A54259 R:Schuller, A.G.; Groffen, C.; van Neck, J.W.; Zwarthoff, E.C.; Drop, S.L. Mol. Cell. Endocrinol. 104, 57-66, 1994 A;Title: cDNA cloning and mRNA expression of the six mouse insulin-like growth A;Reference number: 148600; MUID:95121750 A;Accession: 148604 A;Accession: 148604 A;Accession: 148604 A;Accession: 148604 A;Accession: 148604 A;Accession: 148604 A;Residues: 1-271 <RES> A;Rolecule type: mRNA A;Residues: 1-271 <RES> A;Cross-references: EMBL:X81583; NID:9550384; PID:9550385 A;Cross-references: EMBL:X81583; NID:9550384; PID:9550385 A;Cross-references: EMBL:X81583; NID:9550384; PID:9550385 A;Cross-references: EMBL:X81583; NID:9550384; PID:9550385 A;Title: A highly conserved insulin-like growth factor-binding protein (IGFBP-5 A;Reference number: A48699 A;Accession: A48699 A;Accession: A48699
                                             A;Cross-references: GB:L12447; NID:g425405; PID:g293384
R;Kou, K.; Jenkins, N.A.; Gilbert, D.J.; Copeland, N.G.;
Genomics 20, 412-418, 1994
A;Title: Organization, expression, and chromosomal locati
                                                                                                                                                               A; Status: preliminary
A; Molécule type: mRNA
A; Residues: 1-271 < JAM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          insulin-like growth factor-binding protein 4 - bovine (;Species: Bos prinigenius taurus (cattle) (;Date: 10-Jun-1993 #sequence_revision 18-Nov-1994 #text_change 01-Dec-1995 (;Accession: A45403 R;Moser, D.R.; Lowe Jr., W.L.; Dake, B.L.; Booth, B.A.; Boes, M.; Clemmons, D.R.; Bar, Mol. Endocrinol. 6, 1805-1814, 1992 A;Title: Endothelial cells express insulin-like growth factor-binding proteins 2 to 6. A;Reference number: A45403; MUID:93125553 A;Accession: A45403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Experimental source: pulmonary artery endothelial cells
A;Note: sequence extracted from NCBI backbone (NCBIN:122183, NCBIP:122184)
C;Superfamily: thyroglobulin type I repeat homology
F;174-249/Domain: thyroglobulin type I repeat homology <THY1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Status: preliminary
A;Molecule type: mRNA; p
A;Residues: 1-258 <MOS>
A; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         109 MDCRETCNCQSG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MKSVLLLTTLLVPAHLVAAWSNNYAVDCPQHCDS--SECKSSPRCKRTVLD-DCGCCRVC 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGRGETCYRTVSGMDGMKCGPGLRCQPSNGED 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PSCKFQCTCRDG 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GESC----SDLEPCDESSGLYCDRS--ADP-SNQTGICTAVEGDNCVFDGVIYRSGEKFQ 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GETCYRTVSGMDGMKCGPGLRCQPSNGEDPFGEEFGICK----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LTFLLL--HLLGQVAATQRCPPQCPGRCPA----TPPTCAPGVRAVLDGCSCCLVCARQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30; Conservative
                        on, expression, A54259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -GVYTPRCGSGLRCYPPRGVE 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12.6%; Score 115.5; DB 2; 32.3%; Pred. No. 1.4e-05; tive 24; Mismatches 30;
                                                                                                                                                                                                                                                                                                          insulin-like growth factor-binding protein (IGFBP-5)
                                                   chromosomal location of the mouse insulin-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -DCPYG-----TFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 258;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                         Rotwein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          insulin-like growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          factor b
                                                                                                                                                                                                                                                                                                       is expr
                                                g
```

```
RESULT 6
A53228
A53228
fisp-12 protein precursor - mouse
C:Species: Mus musculus (house mouse)
C:Date: 19-May-1994 #sequence_revision 19-May-1994 #text_change 10-s
C:Accession: A53228
R:Ryseck, R.P.; Macdonald-Bravo, H.; Mattei, M.G.; Bravo, R.
Cell Growth Differ. 2, 225-233, 1991
A;Title: Structure, mapping, and expression of fisp-12, a growth face, Reference number: A53228
A;Accession: A53228
A;Status: preliminary
A;Molecule type: DNA
A;Molecule type: DNA
A;Cross-references:
C;Genetics:
A;Gene: fisp-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: DNA
A; Residues: 1-111 <KOU>
A; Cross-references: GB: U02023
C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R;Brunner, A.; Chinn, J.; Neubauer, M.; Purchio, A.F.
DNA Cell Biol. 10, 293-300, 1991
A;Title: Identification of a gene family regulated by transforming
A;Reference number: A40578; MUID:91229699
A;Accession: A40578
                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Molecule type: mRNA
A;Residues: 1-348 <BRUD
A;Cross-references: GB:M80263; NID:g201945; PID:g201946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            beta IG-M2 protein precursor - mouse C;Species: Mus musculus (house mouse) C;Date: 06-Mar-1992 #sequence_revision C;Accession: A40578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Gene: IGFBP-5
C;Superfamily: thyroglobulin type I repeat homology
F;191-262/Domain: thyroglobulin type I repeat homology
                                                       A; Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 27; Conserv
                                                                                                                                                                                                                                                                                                                                                             80
                                                                                                                                                                                                                                                                                                                                                                                                 82
                                                                                                                                                                                                                                                                                                                                                                                                                                        27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       57 CAAGRGETCYRTVSGMDGMKCGPGLRCQPSNGED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  58 CALAEGQSC-----GVYTERCAQGLRCLPRQDEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4 VLLLTTLLVPAHLVAAWSNNYAVDCPQHCDSSECKSSPRCKRTVLD------DCGCCRV 56
                                                                                                                                                                                                                                                                                                                                                             FCDFGS---PANRKIGVCTAKDGAPCVFGGSVYRSGESFQSSCKYQCTCLDG
                                                                                                                                                                                                                                                                                                                                                                                               RCQPSNGEDPFGEEFGICKD-----CPYG----TFGMDCRETCNCOSG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                      DCSAQCQCAA-EAAPHCPAGVSLVLDGCGCCRVCAKQLGELC----TERDPCDPHKGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DCPQHCDSSECKSSPRCK---RTVLDDCGCCRVCAAGRGETCYRTVSGMDGMKCGP--GL 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LLLLAAYAVPAQGLGSFV------HCEPCDEKALSMCPPSPLGCELVKEPGCGCCMT
                                                   type: DNA: 1-348 <RYS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                   GB:M70641; NID:g193313;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 112; DB 2;
Pred. No. 4.4e-05;
5; Mismatches 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 114.5; DB 2
Pred. No. 1.9e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-Mar-1992 #text_change
                                 PID:g193314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 348;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         271;
                                                                                                                                                                                                                                                                                                                                                             128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21;
                                                                                                                                                                                                                          10-Sep-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20-Mar-1998
                                                                                                                                                 factor-inducible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       growth factor-beta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                      79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   w
••
                                                                                                                                               gen
```

Query Match Best Local Similarity

12.2%;

Score 112; DB 2; Pred. No. 4.4e-05;

Length

```
Proc. Natl. Acad. Sci. U.S.A. 86, 1178-1182, 1989
A:Title: Identification of a phorbol ester-repressible v-src-inducible A:Reference number: A41428; MUID:89145206
                                                                                                                                                                         CEF-10 protein precursor - chicken
C;Species: Gailus gallus (chicken)
C;Date: 03-Apr.1992 #sequence_revision 03-Apr-1992 #text_change
                              A; Residues:
                                                                                                                                                                       C; Accession: A41428
                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              K;Shimasaki, S.; Shimonaka, M.; Zhang, H.P.; Ling, N.
J. Biol. Chem. 266, 10646-10653, 1991
A;Title: Identification of five different insulin-like growth factor binding A;Reference number: A40403; MUID:91244847
A;Accession: A40403
                                                 A; Molecule
                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Superfamily: thyroglobulin type I repeat homology F;1-19/Domain: signal sequence #status predicted <SIG> F;20-271/Product: insulin-like growth factor binding protein : F;191-262/Domain: thyroglobulin type I repeat homology <THY1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Introns: 112/3; 188/3; 228/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Molecule type: protein
A;Residues: 20-25,'X',27-28,'X',30-36,'X',38-43,'X',45-51,'X',53,'XX'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: GB:M62781; NID:g204745; A;Accession: F40403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
A; Residues: 1-271 <SHI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
A; Residues: 1-271 <ZHU>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Accession: JC1663; A40403; F40403
R;Zhu, X.; Ling, N.; Shimasaki, S.
Biochem. Biophys. Res. Commun. 190, 1045-1052, 1993
A;Title: Cloning of the rat insulin- like growth factor binding A;Reference number: JC1463
A;Accession: JC1463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Species: Rattus norvegicus (Norway rat)
C;Date: 30-Sep-1993 #sequence_revision 30-Sep-1993 #text_change
Cross-references: GB:J04496; NID:g211435; PID:g211436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          insulin-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                            58
                                                                                                                                                                                                                                                                                                                                                               57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
les 27; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                   7
                                                                                                                                                                                                                                                                                                                                                                                                                      4 VLLLTTLLVPAHLVAAWSNNYAVDCPQHCDSSECKSSPRCKRTVLD------DCGCCRV 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         82 RCQPSNGEDPFGEEFGICKD-----CPYG-----TFGMDCRETCNCQSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27
                                                              preliminary
                                                                                                                                                                                                                                                                                                                 CALAEGOSC-----GVYTERCAOGLRCLPRODEE 86
                                                                                                                                                                                                                                                                                                                                                   CAAGRGETCYRTVSGMDGMKCGPGLRCQPSNGED 90
                                                                                                                                                                                                                                                                                                                                                                                             LLLLAACAVPAQGLGSFV----
                            type: mRNA
: 1-375 <SI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FCDFGS---PANRKIGVCTAKDGAPCVFGGSVYRSGESFQSSCKYQCTCLDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DCSAQCQCAA-EAAPHCPAGVSLVLDGCGCCRVCAKQLGELC----TERDPCDPHKGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          growth factor-binding protein 5 precursor -
                            <SIM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20;
                                                                                                                                                                                                                                                                                                                                                                                    ----HCEPCDEKALSMCPPSPLGCELVKEPGCGCCMT 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 110.5;
Pred. No. 5.3e
20; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                              5.3e-05;
ches 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PID: g204746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5 #status
                                                                                                                                                                               10-Sep-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                            21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10-Sep-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     predicted <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             proteins (I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA
```

```
A:Map position: 17q12-17q21
C:Superfamily: thyroglobulin type I repeat homology
F:1-23/Domain: signal sequence #status predicted <SIG>
F:24-272/Product: Insulin-like growth factor-binding protein
F:192-263/Domain: thyroglobulin type I repeat homology <THY1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Accession, A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-272 <ALL>
A;Cross-references: GB:L27556; GB:L27557; GB:L27558; (A;Cross-references: GB:L27557; GB:L27558; (A;Cross-references: GB:L27556; GB:L27557; GB:L27558; (A;Cross-references: GB:L27557; GB:L27558; (A;Cross-references: GB:L27557; GB:L27558; (A;Cross-references: GB:L27557; GB:L27558; (A;Cross-references: GB:L27556; GB:L27557; GB:L27558; (A;Cross-references: GB:L27556; GB:L27557; GB:L27558; (A;Cross-references: GB:L27556; GB:L27557; GB:L27558; (A;Cross-references: GB:L27556; GB:L27557; GB:L27558; (A;Cross-references: GB:L27556; GB:L27557; GB:L27558; (A;Cross-references: GB:L27556; GB:L27557; GB:L27558; (A;Cross-references: GB:L27556; GB:L27557; GB:L27558; (A;Cross-references: GB:L27556; GB:L27557; GB:L27558; (A;Cross-references: GB:L27556; GB:L27557; GB:L27558; (A;Cross-references: GB:L27556; GB:L27557; GB:L27558; (A;Cross-references: GB:L27556; GB:L27557; GB:L27558; (A;Cross-references: GB:L27556; GB:L27557; GB:L27558; (A;Cross-references: GB:L27556; GB:L27557; GB:L27558; (A;Cross-references: GB:L27556; GB:L27557; GB:L27558; (A;Cross-references: GB:L27558; (A;Cross-references: GB:L27556; GB:L27557; GB:L27558; (A;Cross-references: GB:L27556; GB:L27557; (A;Cross-references: GB:L27556; GB:L27557; (A;Cross-references: GB:L27558; 
                                                                                                                                                                        A:Cross-references: GDB:126837
A:Map position: 17q12-17q21
                                                                                                                                                                                                                                                                                                                                                    A:Molecule type: protein
A:Residues: 24-37,'X',39-41,'X',43 <AND>
A:Experimental source: cell line V-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A.Experimentary Directors of the Alexandress, D.L.; Birnbaum, R.S.
R.Andress, D.L.; Birnbaum, R.S.
Biochem. Biophys. Res. Commun. 176, 213-218,
A.Title: A novel human insulin-like growth fa
A.Peference number: PHO143; MUID:91207395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: mRNA
A; Residues: 1-272 <SHI>
A; Cross-references: GB:M62782; NID:g184817; PID:g184818
A; Experimental source: placenta
R; K1efer, M.C.; Ioh, R.S.; Bauer, D.M.; Zapf, J.
Biochem. Biophys. Res. Commun. 176, 219-225, 1991
A; Title: Molecular cloning of a new human insulin-like (A; Reference number: JH0391; MUID:91207396
                                                                                                                                                                                                                                                                  A; Gene: GDB: IGFBP5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Reference number: A; Accession: PH0143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: mRNA
A; Residues: 1-272 <KIE>
A; Cross-references: GB:M65062; NID:g184819;
A; Experimental source: ostoosarcoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C.Species: Homo saplens (man)
C;Date: 06-Jan-1995 #sequence_revision 31-Dec-1995 #text_change 20-Mar-1998
C;Accession: A53748; B40403; JH0391; PH0143
R;Allander, S.V.; Larsson, C.; Ehrenborg, E.; Suwanichkul, A.; Weber, G.; Morris, S.L
J.Biol. Chem. 269, 10891-10898, 1994
A;Title: Characterization of the chromosomal gene and promoter for human insulin-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Reference number: A53748
A; Accession: A53748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N; Alternate names:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VQ
                                                                                                                                                                                                                                                                                                                  Comment: Insulin-like growth factors occur
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          insulin-like growth factor-binding protein 5 precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             113 FORNCKHOCTCIDG 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EDCSRTQP-----CDHTKGLEC--NFGASPAATN-GICRAQSEGRPCEYNSKIYQNGES 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LAAALLCLARLALGSP-----CPAVCQCPA--AAPQCAPGVGLVPDGCGCCKVCAKQLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LLTTLLVPAHLVAAWSNNYAVDCPQHCDSSECKSSPRCKRT---VLDDCGCCRVCAAGRG 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FGMDCRETCNCQSG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ETCYRTVSGMDGMKCGP--GLRCQPSNGEDPFGEEFGICKD----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IGFBP-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12.1%;
29.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 111; DB 2
Pred. No. 6e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   insulin-like growth factor binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8, 1991
factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      insulin-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PID:g184820
                                                                                                                                                                                                                                                                                                                          Ħ
                                                                                                                                                                                                                                                                                                                  serum and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GB:L27559; NID:g452057; PID:g505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 375;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   growth factor binding proteins
                                                                                                                                                                                                                                                                                                           other biological fluids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -CPYG-----T
                                                           5 #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                secreted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                        predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ьy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             osteobl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9;
                                                    AIGF
                                                                                                                                                                                                                                                                                                           S
S
```

```
A;Cross-references: GB:S77394; NID:g944951; PID:g944952
C;Superfamily: thyroglobulin type I repeat homology
F;153-228/Domain: thyroglobulin type I repeat homology
                                                                                                                                                                                                                                        R:Carr, J.M.; Grant, P.A.; Francis, G.L.; Owens, J.A.; Wallace, J.C.; Walton, P.E. J. Mol. Endocrinol. 13, 219-236, 1994

A;Title: Isolation and characterization of ovine IGFBP-4: protein purification and A;Reference number: 147031; MUID:95151165

A;Accession: 147031
                                                                                                                                                                                        A:Status: preliminary; translated A:Molecule type: mRNA A:Residues: 1-237 <CAR>
                                                                                                                                                                                                                                                                                                                                      C;Species: Ovis sp. (sheep)
C;Date: 15-Oct-1996 #sequence_revision 15-Oct-1996 #text_change 10-Oct-1997
C;Accession: I47031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Molecule type: mRNA
A;Residues: 1-349 <BRA>
A;Cross-references: GB:M92934; GB:M36965; GB:S56201; NID:g180923; PID:g180924
R;Oemar, B.S.; Werner, A.; Yang, Z.; Garnier, J.M.; Gentz, R.; Luescher, T.F.
submitted to the EMBL Data Library, April 1994
A;Description: Differencial cloning and expression of human connective tissue growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Title: Connective tissue growth factor: a cysteine-rich mitogen secreted by human vas A;Reference number: A40551; MUID:91373462
A;Accession: A40551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C:Species: Homo sapiens (man)
C:Date: 17-Jul-1992 #sequence_revision 17-Jul-1992 #text_change
C:Accession: A40551; S44205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
A40551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references: EMBL:X78947; NID:g474933; PID:g474934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molècule type: mRNA
A; Residues: 1-349 < OEM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Reference number: S44205
A; Accession: S44205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R;Bradham, D.M.; Igarashi, A.; Potter, R.L.; Grotendorst, J. Cell Biol. 114, 1285-1294, 1991
                                                                                                                                                                                                                                                                                                                                                                                  insulin-like growth factor-binding protein-4 - sheep (fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    connective tissue growth factor - human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                    Query Match
Best Local :
                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
BesteLocal Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27
                                                                                                                                                                                                                                                                                                                                                                                                                                11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 VILLTTLLVPAHLVAAWSNNYAVDCPQHCDSSECKSSPRCKRTVLD------DCGCCRV 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FCDFGS---PANRKIGVCTAKDGAPCIFGGTVYRSGESFQSSCKYQCTCLDG 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DCPQHCDSSECKSSPRCK---RTVLDDCGCCRVCAAGRGETCYRTVSGMDGMKCGP--GL 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RCQPSNGEDPFGEEFGICKD-----CPYG-----TFGMDCRETCNCQSG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCSGPCRCPD-EPAPRCPAGVSLVLDGCGCCRVCAKQLGELC----TERDPCDPHKGL 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAGRGETCYRTVSGMDGMKCGPGLRCQPSNGED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LLLLAAYAGPAQSLGSFV-----HCEPCDEKALSMCPPSPLGCELVKEPGCGCCMT 58
                                                   24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34;
                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                              11.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27.78;
                                               13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14;
                                          Score 107; DB
Pred. No. 0.000
13; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20;
                                                                                                                                                                                                                           from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 109; DB 2;
Pred. No. 9.4e-05;
4; Mismatches 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. 6.8e-05; 0; Mismatches 27;
                                                              DB 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           90
                                                                                                                                  homology <THY1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36;
                                                                             Length 237;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 349;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28;
                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20-Mar-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21;
                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                          Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ω
                                                                                                                                                                                                                                                                              CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                fa
A;Molecule type: mRNA
A;Residues: 1-50,'A',52-197,'F',199-258 <LAT>
                                                                                                                                                              A; Molecule type: mRNA
A; Residues: 1-258 < KIE>
                                                                                                                                                                                                                                                                                        A; Molecule type: mRNA
A; Residues: 1-258 <SHI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: GDB:126811;
A;Map position: 17q12-17q21
A;Introns: 117/1; 169/3; 214/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-258 <STR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Reference number: A; Accession: G01662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Gene: GDB: IGFBP4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Status: preliminary; translated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;Accession: G01662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              63 ETCYRTVSGMDGMKCGPGLRCQPSNGED 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        58 RCHPPRGVE 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RCQPSNGED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OMIM: 146733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            87
```

```
A;Cross-references: GB:M62403; NID:g184815; PID:g184816
R;LaTour, D.; Mohan, S.; Linkhart, T.A.; Baylink, D.J.; Strong, D.D.
MOl. Endocrinol. 4, 1806-1814, 1990
A;Title: Inhibitory insulin-like growth factor-binding protein: cloning, A;Reference number: A36549; MUID:91186988
A;Accession: A36549
                                                                                                                                                                                                                                                         R;Kiefer, M.C.; Masiarz, F.R.; Bauer, D.M.; Zapf, J. J. Biol. Chem. 266, 9043-9049, 1991
A;Title: Identification and molecular cloning of two new A;Reference number: A39842; MUID:91225006
A;Accession: B39842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              insulin-like growth factor-binding protein 4 precursor - human N;Alternate names: IGFBP-4; inhibitory insulin-like growth factor-binding protein; in C;Species: Homo sapiens (man)
C;Date: 28-Mar-1991 #sequence_revision 28-Mar-1991 #text_change 13-Sep-1998
C;Accession: B37252; B39842; A36549; A60712; A54650; A49801; A34419
R;Shimasaki, S.; Uchlyama, F.; Shimonaka, M.; Ling, N.
Mol. Endocrinol. 4, 1451-1458, 1990
A;Title: Molecular cloning of the cDNAs encoding a novel insulin-like growth factor-b A;Reference number: A37252; MUID:91133415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Status: not compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         submitted to the EMBL Data Library, February 1995 A; Reference number: 608078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          insulin-like growth factor binding protein-4 - human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;Species: Homo sapiens (man)
;Date: 21-Dec-1996 #sequence_revision 06-Jun-1997 #text_change 17-Jul-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6 LLTTLLVPAHLVAAWSNNYAVDCPQHCDS--SECKSSPRCKRTVLD-DCGCCRVCAAGRG 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LVAALLLAAGPGPSLGDE-AIHCPPCSEEKLARCRPPVGCEELVREAGCGCCATCALGLG 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AIHCPPCSEEKLARCRPPVGCEELVREPGCGCCATCALGKGMPC-----GVYTPDCGSGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL:U20982; NID:g695253; PID:g695254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 106.5; DB 2
Pred. No. 0.00014;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              from GB/EMBL/DDBC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                          30-kDa insulin-like growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81
                                                          complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.
                                                       seq
```

```
A;Cross-references: GB:J05228
C;Superfamily: insulin-like growth factor binding protein 1; thyroglobulin
F;188-260/Domain: thyroglobulin type I repeat homology <THY1>
                                                                                                                                                                               insulin-like growth factor-binding protein 3 homolog - pig C;Speckes: Sus scrofa domestica (domestic pig) C;Date: 20-Jul-1990 #sequence_revision 20-Jul-1990 #text_change 01-Dec-1995 C;Accession: A35037
R;Shimasaki, S.; Shimonaka, M.; Ui, M.; Inouye, S.; Shibata, F.; Ling, N. J. Biol. Chem. 265, 2108-2202, 1990
A;Title: Structural characterization of a follicle-stimulating hormone actic A;Reference number: A35037; MUID:90130475
                                                                                                     A; Molecule type: mRNA
A; Residues: 1-266 <SHI>
                                                                                                                                                         A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: GDB:126811; OMIM:146733
A;Map position: 17q12-17q21
C;Superfamily: thyroglobulin type I repeat homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A:Experimental source: colon adenocarcinoma cells R:Mohan, S.; Bautista, C.M.; Wergedal, J.; Baylink, D.J. Proc. Natl. Acad. Sci. U.S.A. 86, 838-8342, 1989 A;Title: Isolation of an inhibitory insulin-like growth A;Reference number: A34419; MUID:90046792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Gene: GDB: IGFBP4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: protein
A; Residues: 22-29, 'E', 31-32, 'A', 34-36 <MO2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A:Experimental source: TE85 osteosarcoma cells
A:Note: sequence extracted from NCBI backbone (NCBIP:121076)
R:Culouscou, J.M.; Shoyab, M.
Cancer Res. 51, 2813-2819, 1991
A:Title: Purification of a colon cancer cell growth inhibitor and its identification as A:Reference number: A49801
A:Recession: A49801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: protein A; Residues: 22-53 < CUL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Growth Regul. 1, 110-118, 1991 A;Tile: Evidence that the inhibition of TE85 human bone cell proliferation A;Reference number: A54650; MUID:93091814 A;Accession: A54650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: protein
A; Residues: 22-29, 'X', 31-42 <MOH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: protein
A; Residues: 22-26, 'X', 28-29, 'X', 31-35 <PER>
R; Mohan, S.; Baylink, D.J.
Growth Regul. 1, 110-118, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Tocal Similarity
Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Perkel, V.S.; Mohan, S.; Baylink, D.J.; Linkhart, T.A.
J. Clin. Endocrinol. Metab. 71, 533-535, 1990
A;Title: An inhibitory insulin-like growth factor binding protein (In-IGFBP) from human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          :1-21/Domain: signal sequence #status predicted <SIG>
;22-258/Product: insulin-like growth factor-binding protein 4 #status experimental <MA?
;174-249/Domain: thyroglobulin type I repeat homology <THY1>
;125/Binding site: carbohydrate (Asn) (covalent) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Keywords: glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           65 MPC-----GVYTPRCGSGLRCYPPRGVE 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6 LLTTLLVPAHLVAAWSNNYAVDCPQHCDS--SECKSSPRCKRTVLD-DCGCCRVCAAGRG 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ETCYRTVSGMDGMKCGPGLRCQPSNGED 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LVAALLLAAGPGPSLGDE-AIHCPPCSEEKLARCRPPVGCEELVREPGCGCCATCALGLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 106.5;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               106.5; DB 2;
No. 0.00014;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               growth factor (IGF) binding protein
                                                                                                                                                                                                                      hormone action
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64
                                type I repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         by agents
                                                                                                                                                                                                                   inhibitor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       fi
                                                                                                                                                                                                                                                                                        Search completed: May
Job time: 1014 sec
```

Ψ

1999,

```
A;Molecule type: protein
A;Molecule type: protein
A;Residues: 20-25,'X',27-28,'X',30-36,'X',38-39 <SHI>
C;Comment: This protein has essential roles in the regulation and coordination of ins lays a role during myobiast proliferation and differentiation, and is important in th C;Superfamily: thyroglobulin type I repeat homology
C;Superfamily: thyroglobulin type I repeat homology
C;Reywords: differentiation; growth factor; skeletal muscle
F;119/Domain: signal sequence #status predicted <SIG>
F;20-271/Product: insulin-like growth factor binding protein-5 #status experimental <
F;191-262/Domain: thyroglobulin type I repeat homology <THYI)
              밁
                                                      δÃ
                                                                                                  밁
                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: GB:U41340; NID:gl173906; PID:gl173907
A;Experimental source: skeletal muscle
R;Shimasaki, S.; Gao, L.; Shimonaka, M.; Ling, N.
Mol. Endocrinol. 5, 938-948, 1991
A;Title: Isolation and molecular cloning of insulin-like growth factor-binding protei
A;Reference number: A23734; MUID:92049376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   insulin-like growth factor binding protein-5 - pig C;Species: Sus scrofa domestica (domestic pig) C;Date: 10-Apr-1996 #sequence_revision 24-May-1996 #text_change 10-Oct-1997 C;Accession: JC4584; G23734 R;White, M.E.; Diao, R.; Hathaway, M.R.; Mickelson, J.; Dayton, W.R. Biochem. Biophys. Res. Commun. 218, 248-253, 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: mRNA
A; Residues: 1-271 <WHI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Reference number: JC4584
A; Accession: JC4584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Biochem. Biophys. Res. Commun. 218, 248-253, 1996
A;Title: Molecular cloning and sequence analysis of the porcine insulin-like growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
JC4584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                        57
                                                                                                                                                                                                                 Local
                                                                                                                          4 VLLLTTLLVPAHLVAAWSNNYAVDCPQHCDSSECKSSPRCKRTVLD------DCGCCRV 56
                                                                                              7 LLLLAACAGPAQGLGSFV----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12 RCEPCDARALAQCAPPPAAPPCAELVREPGCGCCLTCALREGQAC-----GVYTERCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      31 HCDSSECK-----SSPRCKRTVLD-DCGCCRVCAAGRGETCYRTVSGMDGMKCGPG 80
                                          CAAGRGETCYRTVSGMDGMKCGPGLRCQPSNGED 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LRCQPSNGE----DPFGEEFGIC 99
                                                                                                                                                                                                   1 11.4%; Score 104.5; DB 2 Similarity 27.7%; Pred. No. 0.00024;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
-GVYTERCAQGLRCLPRQDEE 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11.4%;
                                                                                  ----HCEPCDEKALSMCPPSPLGCELVKDPGCGCCMT
                                                                                                                                                                                  20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 104.5; DB 2
Pred. No. 0.00024;
                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                              27;
                                                                                                                                                                                                                          2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2;
                                                                                                                                                                           Indels
                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  266;
                                                                                                                                                                           21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19;
                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 66
                                                                                                                                                                         ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4;
```

THIS PAGE BLANK (USPTO)

```
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nucleic search, using sw model
                         Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-037-460-1_COPY_61_609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          May 3, 1999, 22:52:08; Search time 49.71 Seconds (without alignments) 2077.732 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N_Geneseq_34:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 AAGAGCGTCTTGCTGCTGAC......GGAAATGGTTAAATCCACGC 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240622 seqs, 94065609 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GenCore version 4.5
Copyright (c) 1993 - 1998 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                       DB
                                      794991
794991
794622
236033
236033
236033
751234
745236
745380
745380
749260
749260
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
74020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARIES
            Human gene signatu
Human gene signatu
Human secreted pro
Mouse neurogenin 1
Prostaglandin 12 (
Prostaglandin 12 (
                                                                                                                                                                                                     Human lung tissue
Human ALD gene exo
B2-bradykinin rece
B2-bradykinin rece
B2-bradykinin rece
B2-bradykinin rece
Human T1 receptor
Human lung tissue
                                                                                                                                                                                                                                                                                                                           Human cortistatin
Transglutaminase c
Arabidopsis thalia
Streptococcus pneu
DNA encoding a S.
S. marcesens Ssp-h
S. marcesens Ssp-h
Human retinoid X r
Plasmid poksC6f co
                                                                                                                  Human gene signatu Signal portion of Mycobacterial ahpc
                                                                                                                                                                       Streptococcus pneu
Human lung tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chicken nov gene f
Tobacco lycopene c
S-adenosylmethioni
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Connective tissue Human connective :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human connective to Connective tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Connective tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human connective
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chicken nov gene e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human connective
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gene for beta-IG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Murine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Vascular IBP-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     e Fisp12 cDNA
for beta-IG-M
          8888
Claim 1; Page 42-43; 61pp; English.
A cDNA clone (T34991) codes for human vascular insulin-like growth factor binding protein-like growth factor (R98994), or VIGF, a protein structurally related to the IBP and CCN
```

Result No.

Score

Database : Searched: Scoring table: Sequence: Perfect score: Title: Run

9 2

OM nucleic

,

a

a a a 0.0 000000000

36.4 36.4 36.4 35.2 35.2 35.2 35.2 35.2 35.2 35.2 35.2 35.2 35.2 35.2 35.2 35.2 35.2 36.4 36.4 36.4 36.2

a

יי טי	יםי	יטיר	, 0	.	יי טי	טי כ	יטי	י נדי	ם ח	חבים וה	tad .								_																						•				
PS F										ij	H	rij i	3 13	13 1	4 1	ii i	Ę	T T	Ŧ	A L	H	H.	7 7	T.	H :	1 H	FT	3 5	FT	H F	H	H 1	1 1	H H	4 13	ΞC	S S	X	X X	B	A F	RESULT T34991 ID T			
clai	used	Human .	P-PS	WPI;	Hast	09-E	09-E	13-0	500		- 1	misc			3.00		misc			mis		į	3		STIII	•		mis			mis	ma t	} }	signa	cds	Xev	the	mus	ins	Vas	. ω	ω			44
Or limit Claim 1;	0		PSDB;	WPI; 96-2	Ange	EC-1	的: 1-1-1	UN-1	1703			dif			<u>,</u>		_dif		1	c dif		. [C_01	<u>.</u>		c_dif	:		c_di	_pept1	}	,-		V	rapy	muscle wa	icula	Vascular	5 %	1991			22
Page	g. to	vascular	R989	2871	HUMA	994;	994;	-JUN-1996.	1			ference		1010	h		fe			fer		۲	ħ		rrere			-	1		ffer	Elde	- ·	_peptide		Suarde	, di	wast	insulin-like o	T IB	3	5			6.4
942	trea.		•	76/29	N GED	₩0-I	U14:	•		_				ď	}		rence		- 1	ence		or or ce			rerence			erence			erence					•	agno	age;	F-11	P-11	'n	andard;			<u> 4</u> 5
Page 42-43; 61pp;	et mu:	insulin-	1	-287176/29.	EWO.	J1436	388.		speci	note	/*tac	specificati	/note-	/*tac	specif:	/*tag= /note=	1259	/note=	/*ta	specif:	/note-	/*ta	Spec	/note-	1212	specifi	/note=	1096	specification"	/*tag-	653	121.	/*tag-	58.	58612	5	sis;	wastage; osteoporosi	'-like growth	like g	\$; cDNA;			80
61pp	uscle	,		,	. U	•			fica	, T	ĭ.	Ltica	. H.	ĭ	Ċ				g= h	ifica	-		6	-			ip ic =	1	ific	, ,			Į.	.120	.612	3	ss.	zodo:	rowth	rowth	· ·				632 119
, e 당 당	e wa	ike g			INC.				ò	õ		tion	"base	_	tion	OI .	101	90	2		base	4	-	base	ħ	atio	"base	•	atio	y D	• •	ω	_ס	_ വ	7			5150	fac	iy)		1271			- -
tissue pr English.	stino	rowt							3	1265		-	1261		=	1259		1255		3	1225		=	1212		7	1096		Τč	n n					12111			;; im	tor;	h factor cDNA.	;	B 0		œ.	Q360 T255
prodn.	die	n fac								is			İs		į	'n		is			is			is		,	is		TS 9	0					C C	3		ng p	VIG	CDNA				LIGN)34 514
O	diseases c	actor								given			given			į		given			given		•	given		9	given		Jiven								!	rote:	F)	•				ALIGNMENTS	
										as			as		2	3 0		n as			nas			n as			i a		as								į	i b					•	w	
ow o	na aid	nding								n in			n in		: :	3 		n in			Ϋ́			n L		H	٦ 		y in								;	ion: wour							
und	ant)	prot								the			the		2	+		1 the			n the			n the			n + ho		the								,	≍ ∵							
ng wound healing.	agon:	ein-													,,			10			W		,	ıv		a	D										1	anta							Chick Human
- 1	ນ່	like																																			5111	antagoni:							
	÷ ,																																				•	st;							nov
•																																													gene f signatu
																																													e f

```
RESULT
T947000
ID T94700
T9 T9
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
AC T5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        岛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               გგგგგგგგ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 549
WO9733995-A2.
18-SEP-1997.
14-MAR-1997; U
15-MAR-1996; U
                                                                                                                                                                                         794700;
27-MAR-1998 (first entry)
Murine Fispl2 cDNA.
Fispl2; Cysteine rich protein; mouse; Cyr61;
extracellular matrix signalling molecule; cell adhesion;
cell migration; cell proliferation; anglogenesis; chrond
                                                                                                                                                                                       oncogenesis; ss.
                                                                                                                                                                                                                                                                                                                                         T94700 standard; cDNA; 2267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               families. It was discovered in a cDNA library derived from hum umbilical vein endothelial cells. The cDNA can be used for prodn. of recombinant VIGF, e.g. by expression in E. coll, CHO or insect host cells. It is also useful therapeutically e.g. to treat muscle wasting diseases or osteoporosis, or to design probes for the detection of diseases associated with under-or over-expression of VIGF.

Sequence 1271 BP; 360 A; 246 C; 337 G; 320 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                    musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    س
                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATCCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATCCACGC 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGAGAGAAGTTGTGAAAGAGAATGCTGCCGGGTCTCCCGTAATGAGGAAATGGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGAGAGAAGTTGTGAAAGAGAATGCTGCCGGGTCTCCCGTAATGAGGAAATGGTTA 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTGACAGGGGGACGGGAAAATGCCTGAAATTCCCCCTTCTTCCAATATTCAGTAACCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTGACAGGGGGACAGATGCCTGAAATTCCCCTTCTTCCAATATTCAGTAACCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTCCCTACGGCACCTTCGGGATGGATTGCAGAGAGACCTGCCAACTGCCAGTCAGGCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGAGTTTGGTATCTGCAAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAGAAACTTGCTACCGCACAGTCTCAGGCATGGATGGCATGAAGTGTGGCCCGGGGCTG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCTGCCGAGTGTGCGCTGCAGGGCGG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  549;
             U04193.
US-013958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                             609
                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 549; DB 1; Pred. No. 2.9e-170;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                  chrondrogenesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1271;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
TIGF-beta induced gene family - encodes proteins involved in growth and differentiation effects of TGF-beta-1

SC Claim 7; Fig 2; 35pp; English.

CThe DNA encoding mouse beta-IG-M2 was obtd. from AKR-2B mouse cells induced with TGF-betal and cyclohexamide. Poly RNA extracted from these cells was used to create a cDNA library which was screened cusing two probes. The probes were prepd. from untreated AKR-2B mRNA cand AKR-2B mRNA from cells treated with cyclohexamide and TGF-betal. Hybridising colonies were isolated and two clones (beta-IG-M2) were then sequenced. The DNA encodes proteins that have a 80 and 50 percent homology respectively with the CEF-10 protein induced by v-src in chicken embryo fibroblasts. The proteins encoded by TGF-beta induced genes are likely to be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This cDNA clone codes for muffine Fispl2 (see w35731), an extracellular matrix signalling molecule (ECM) that exhibits structural similarity to Cyr61 (see w35730) and which, like (Cyr61, influences cell adhesion, proliferation and migration. The human orthologue of Fispl2 is connective tissue growth factor. Fispl2 polynucleotides can be used for the production of Fispl2 polynucleotides can be used for the production compositions are provided that comprise mammalian ECM signalling molecules, peptide fragments, inhibitory peptides capable of interacting with receptors for ECM signalling molecules, and antibody products. Further provided are methods for using mammalian ECM signalling molecules to screen for, and/or modulate disorders associated with angiogenesis, chondrogenesis and to propagate blood products are also recycled.
                                                                                                                                                                                                                 22-JUL-1992;

17-JAN-1992; US-642991.

18-JAN-1992; US-816270.

10-JAN-1992; US-816270.

(BRIM ) BRISTOL-MYERS SQUIBB CO

Brunner AM, Chinn J, Neubauer M

WPI; 92-243508/30.

P-PSDB; R25565.
                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus.
                                                                                                                                                                                                                                                                                                                                                                                                                                        Transforming growth factor beta; induced; CEF-10; v-src; chicken; embryo; fibroblasts; TGF-beta; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gene for beta-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-JAN-1993 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q26422 standard; DNA; 2330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to prepare blood products are also provided. Sequence 2267 BP; 570 A; 568 C; 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            modulate e.g. had regeneration etc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Example 2; Page 113-114; 133pp; English This cDNA clone codes for murine Fisp12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Isolated and purified cysteine rich modulate e.g. haematostasis, induce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           320 GCAGCTGGGAGAACTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        174 AGGGCGGGGAGAAACTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P-PSDB; W35731.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (MUNI-) MUNIN CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGCCCCGCCGGCGTGAGCCTGGTGCTGGACGGCTGCGGCTGCTGCGGCGAA 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -470875/43.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IG-M2
                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers 204. .1247
                                                                                                                                                                                                                                                                                                                                                                          /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽P
                                                                                                                                                                                                                                                       r co.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 36.4; In Pred. No. 0.03 0; Mismatches
                                                                                                                                                                                                                                                     Purchio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein 61, Cyr
wound healing,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1;
).037;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cyr61 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       organ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

```
RESULT
Q36031
ID Q
AC Q
DT C
KW
OS
                                                                                                                                                    밁
                                                                                                            밁
                                                                                                                           Š
                                                                                                                                                                    ν
                                                                                                                                                                                                                                   Mucleotide sequences hybridising to regions of chicken nov gene - was full as probes for detecting complementary sequences to revaluate development and/or differentiation of tumours Claim 2; Page 27; 67pp; French.

The chicken nov gene is stimulated in avian nephroblastoma induced by avian myeloblastoma virus but not in normal adult kidney. A clays po cDNA sequence was isolated from a gene bank prepared from chicken embryonic fibroblasts screened with a tumour-derived probe. Fragment III is derived from the 2nd. exon of the nov gene; nucleotide sequences which hybridise to Fragment III under stringent conditions (i.e. 50% formamide, 5 x SCC) are claimed. The claimed conditions of i.e. 50% formamide, 5 x SCC) are claimed. The claimed conditions of the sequences which hybridise to Fragment III under stringent sequences preferably encode a protein with at least 70% homology to Sequence 230 BP; 18 A; 89 C; 97 G; 26 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                           Query Match
Best Local S
Matches 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ន្តន្តន្ត
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 52
            24-MAY-1993 (first entry)
Chicken nov coding sequence.
avian mephroblastoma; avian myeloblastoma virus;
                                    Q36031;
24-MAY-1993
                                                       Q36031 standard; cDNA; 1975
                                                                                                                                                                                                                                                                                                                                                                                                25-JUN-1991; FR-007807.
(CNRS ) CENT NAT RECH SCI.
Martinerie C, Perbal B;
WPI; 93-036377/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      avian nephroblastoma; avian myeloblastoma virus;
                                                                                                                                           P-PSDB; R31600.
                                                                                                                                                                                                                                                                                                                                                                                                                               25-JUN-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO9300430-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 stringent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chicken nov gene exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      involved relating See also Sequence
                                                                                                                     173 CAGGGCGGGGAGAACTTGCTACC 196
                                                                                                                                                                                                                                                                                                                                                                                                                                          25-JUN-1992; F00589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q36033 standard; cDNA;
Q36033;
                                                                                                       127 GGCAGCGCGGCGAGAGCTGCTCCC 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24-MAY-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      174 AGGGCGGGGAGAAACTTG 191
                                                                                                                                                                                           Local Similarity
les 53; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    386 GCAGCTGGGAGAACTGTG 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      326 CTGCCCGCCGGCGTGAGCCTGGTGCTGGACGGCTGCGGCTGCCGCGTGTGCGCCAA 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         114 CAGCCCGCGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCCGAGTGTGCGCTGC 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity 66.7
52; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     in mediation of the biological effects of
to cell growth and differentiation.
Q26421.
2330 BP; 589 A; 598 C; 595 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              hybridisation; ss.
                                                                                                                                                                                          Conservative
                                                                                                                                                                                                 63.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  230 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fragment III
                                                       ВP
                                                                                                                                                                                  Score 34.4; DB 1
Pred. No. 0.053;
0; Mismatches 3
                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 36.4; I
Pred. No. 0.03
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   598 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1;
                                                                                                                                                                                                         DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>ن</u>
                                                                                                                                                                                                          Length 230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 2330;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGF-beta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   548
                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                   RESULT
T04226
                                                                             Ş
                                                                                                   밁
                                                                                                                     δõ
                                                                                                                                          밁
                                                                                                                                                            ğ
                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                  δÃ
T04226 standard; cDNA; T04226;
                                                                              186
                                                           230
                                                                                                   170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          exon
                                                                                                                      126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Key
```

```
Proposes, R31599.

The Colicken nov gene is stimulated in avian nephroblastoma induced the chicken nov gene experiences to provide sequences hybridising to regions of chicken nov gene is reach.

Claim 1; Fig 1; 67pp; French.

Claim 1; Fig 1; 67pp; French.

Claim 2; French.

Claim 3; French.

Claim 4; Fig 1; 67pp; French.

Claim 5; French.

Claim 6; French.

Claim 6; French.

Claim 7; French.

Claim 7; French.

Claim 7; French.

Claim 1; Fig 1; 67pp; French.

Claim 1; Fig 1; 67pp; French.

Claim 1; Fig 1; 67pp; French.

Claim 1; Fig 1; 67pp; French.

Claim 1; Fig 1; 67pp; French.

Claim 1; Fig 1; 67pp; French.

Claim 1; Fig 1; 67pp; French.

Claim 1; Fig 1; 67pp; French.

Claim 1; Fig 1; 67pp; French.

Claim 1; Fig 1; 67pp; French.

Claim 1; Fig 1; 67pp; French.

Claim 1; Fig 1; 67pp; French.

Claim 1; Fig 1; 67pp; French.

Claim 1; Fig 1; 67pp; French.

Claim 2; French.

Claim 2; Fig 1; 67pp; Fig 1; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp; 67pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 101; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (CNRS) CENT NAT RI
Martinerie C, Perl
WPI; 93-036377/04.
                                                                                                                                                                                                                                         113 GTGCCCCGGCCCTGCGGCGGGGCGCTG---CCCCGCGGAGCCGCCGCGCGCGCCCCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                07-JAN-1993.
25-JUN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              signal_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           polya_signal
                                                                                                                                                                                                                                                                                                      polya_signal
                                                                                                                                                                                                                                                                                                                                                                      53 Cerecriserserrecreerecreerecesecersesascreaseceseceseasecese 112
                                                                                                                                                                                                                                                                                                                                                                                                                                          6 CGTCTTGCTGCTGACCACGCTCCTCGTGCCTGCACACCTGGTGGCCGCCTGGAGCAATAA
                                                                                                                                                 CAAGAGGACAGTGCTCGACGACTGTGGCTGCCGAGTGTGCGCTGCAGGGCGAGA 185
                                                                                                            AGTGCCCGCCGTGCTGGACGGCTGCGGCTGCTGGTGTGCGCCCCGGCAGCGCGGCGA
   GAGCTGCTCCC
                                                                AACTTGCTACC 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .; F00589.
1; FR-007807.
TAT RECH SCI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /*tag= a
1814..1818
/*tag= b
1932..1937
240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           322. .573
/*tag= g
/number= 3
574. .782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93. .321
/*tag= f
/number= 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /number=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83. .1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'number-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /number=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /*tag=
1. .92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
24. .1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            *tag= h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ′*tag= e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      52.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 35.8; DB Pred. No. 0.054; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1975;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                  229
                                                                                                                                                                                                                                            169
                                                                                                                                                                                                                                                                                                                                                                                                                                             65
```

ŗ

2075 BP

```
RESULT T51334

ID T3, T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5 AC T5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Example 5; Column 15-18; 12pp; English.

C A CDNA clone (T04226), designated DB60732, codes for human connective tissue growth factor (CTGF) (R79964), a protein that connective tissue growth factor (CTGF) (R79964), a protein that cells and which binds to the platelet-derived growth factor (PDGR) receptor. The cDNA was obtd. from a library of human cumbilical vein endothelial cell cDNA in vector lambda gtll by screening with an anti-PDGF antibody. The cDNA is useful for prodn. of recombinant CTGF or in the design of antisense or cribozyme constructs used to treat disorders associated with covergrowth of tissue cells, such as cancer, fibrotic diseases and atherosclerosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-APR-1995.
30-AUG-1991; 752427.
30-AUG-1991; US-752427.
14-DEC-1993; US-167628.
(UYSF-) UNIV SOUTH FLORIDA.
Bradham DM. Grotendorst GR;
                                                          30-AUG-1991;
30-AUG-1991;
14-DEC-1993;
10-FEB-1995;
                                                                                                                                                                                                                                                                                                                                                  18-MAR-1997 (first entry) connective tissue growth factor coding sequence. Connective tissue growth factor; CTGF; human; connective tissue growth factor; CTGF; human; connective tissue growth factor; PDGF; development; proliferative disease; platelet-derived growth factor; PDGF; development; tissue growth; repair; umbilical vein endothelial cell; HUVE cell; antibody; wound healing; cancer; fibrotic disease; atherosclerosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           T51234;
18-MAR-1997
                                                                                                                                                           US5585270-A.
17-DEC-1996.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P-PSDB; R79964.
New connective tissue
                                     (TYSF-)
                                                                                                                                                                                                                                                                                                                                     inhibitor; protease degradation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo
Key
cds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                £13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cell proliferation; contherapy; mitogen; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12-JUN-1996 (first entry)
Connective tissue growth factor cDNA.
Connective tissue growth factor; CTGF; wound healing; vulnerary; cell proliferation; cancer; fibrosis; atherosclerosis; diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                51234 standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US5408040-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGGGCGGGGAGAAACTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGCCCGCGCTGCAAGAGGACAGTGCTCGACGAGCTGCTGCCGAGTGTGCGCTG 172
                                                                                                                                                                                                                                                                                                                  sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCAGCTGGGCGAGCTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTGCCCGGCGGGCGTGAGCCTCGTGCTGGACGGCTGCGGCTGCTGCGCGCGTCTGCGCCA 313
          ONIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
; 752427.
; US-752427.
; US-167628.
; US-386680.
V SOUTH FLORIDA.
Grotendorst GR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                      Location/Qualifiers
130. .1179
/*tag= a
/product= connective
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers 130. .1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         growth factor - used to develop prods. for diagnosis and therapy of cell proliferative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       491 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GR;
                                                                                                                                                                                                      connective tissue growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 35.2;
Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                     growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ç
                                                                                                                                                                                                                                                                                                                                     factor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .087;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>.</u>
                                                                                                                                                                                                                                                                                                                                  therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 2075;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
```

```
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOLT
TASSOL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PT proliferative disease

PS Claim 10; Column 15-18; lipp; English.

CC This sequence represents the cDNA encoding the human connective tissue

CC growth factor (CTGF). CTGF is related immunologically and biologically

CC to platelet-derived growth factor (PDGF), but is encoded by an unrelated

CC gene. CTGF is thought to play a significant role in the normal

CC development, growth, and repair of human tissue, similarly to PDGF. This

CC sequence was isolated by screening a cDNA library from human umbilical

CC vein endothelial (HUVE) cells with anti-PDGF antibodies. CTGF can be

CC used to accelerate wound healing. Also, elevated levels of CTGF may be

CC diagnostic of proliferative diseases involving outgrowth of connective

CC tissue cells, such as cancer, fibrotic disease and atherosclarosis. All

CC of these diseases can be treated with reagents reactive with CTGF, such

CC as antibodies (which can also serve as assay reagents). Antisense

CC nucleic acids, and ribozymes could also be used to inhibit CTGF

CC production. The advantage with using CTGF is that it is more stable, and

CC factors involved in wound healing. This is believed to be due to the

cc high CVs content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       05-DEC-1996.
31-MAY-1996; 1
Claim 20; Page 50-52; 76pp; English.

A CDNA clone (745360) codes for novel human connective tissue growt factor (CTGF) (W09089), a PDGF 'Immunorelated protein that may play significant role in the normal development, growth and repair of human tissue and which probably functions as a growth factor in wound healing. CTGF may be involved in diseases in which there is an overgrowth of connective tissue cells, such as cancer, tumour formation and growth, fibrotic diseases (e.g. pulmonary fibrosis, kidney fibrosis, glaucoma) and atherosclerosis. The CDNA clone was isolated from a HUVEC CDNA library using anti-PDGF antibody. CTGF
                                                                                                                                                                                                                                                               healing
Claim 20; Page
                                                                                                                                                                                                                                                                                                                                                                                                         (UYSF-) UNIV SOUTH
Bradham DM, Groter
WPI; 97-042659/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human connective tissue growth factor cDNA.

Connective tissue growth factor; CTGF; mitogen; cell proliferation; wound healing; cancer; tumour; fibrosis; glaucoma; atherosclerosis; diagnosis; therapy; antisense; triple helix; ribozyme; ss.
                                                                                                                                                                                                                                                                                                                            Connective tissue in the treatment o
                                                                                                                                                                                                                                                                                                                                                                                  P-PSDB; W09089.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                T45360 standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26-APR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        high Cys content.
Sequence 2075 F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 97-051180/05.
P-PSDB; W11302.
New nucleic acid encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for accelerating wound healing,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGGGCGGGGAGAAACTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCAGCTGGGCGAGCTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTGCCCGGCGGGGGTGAGCCTCGTGCTGCACGGCTGCGGCTGCTGCCGCGTCTGCGCCA 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                WO-UUBLT.
/ SOUTH FLORIDA.
----Anrst GR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers 130. .1179
                                                                                                                                                                                                                                                                                                                      e growth factor coding sequence of proliferative disorders and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        65.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g connective paling, also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 35.2; D
Pred. No. 0.08
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tissue growth for diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
.087;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  546 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>ب</u>
                                                                                                                                                                                                                                                                                                                   and protein .
to accelerate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      factor - usefu
and treatment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2075;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                      e growth
V play a
r of
                                                                                                                                                                                                                                                                                                                   - used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
```

```
Ş
 밁
                                                              밁
                                                                                           Š
                                                                                                                                                                                               Ameliorating cell proliferative disorder associated with connective tissue growth factor - comprises the administration of an antibody which binds to connective tissue growth factor and not to platelet-derived growth factor platelet-derived growth factor growth factor associated with connective tissue growth factor (TGF). The method has been developed for ameliorating a cell proliferative cdisorder associated with connective tissue growth factor (TGF). The method comprises the administration of an antibody or its fragment that binds to CTGF and not to platelet-derived growth factor (PDGF), to the csite of the disorder. CTGF is related immunologically and biologically to PDGF. The present sequence encodes CTGF. The method is used to treat conditions involving the overgrowth of connective tissue cells such as cancer, atherosclerosis and other fibrotic diseases.

So Sequence 2075 BP; 491 A; 558 C; 546 G; 480 T;
                                                                                                                             Query Match
Best Local S
Matches 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ន្តន្តន្តន
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                  21-JÜL-1998.

11-SEP-1996; 712302.

30-AUG-1991; US-752427.

14-DEC-1993; US-167628.

11-SEP-1996; US-712302.

(UYSF-) UNIV SOUTH FLORIDA.

Bradham DM, Grotendorst GR;

WPI; 98-426958/36.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; connective tissue growth factor encoding cDNA.

Human; connective tissue growth factor; CTGF; PDGF; diagnosis; cancer; platelet derived growth factor; ameliorating cell proliferative disorder; atherosclerosis; fibrotic disease; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         V38085;
15-SEP-1998 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                          P-PSDB; W62084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US5783187-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nucleic acids can be used for recombinant prodn. of CTGF and as Probles to detect CTGF mRNA. CTGF genomic DNA (T58534) has also been isolated. A proliferative disorder may be treated using e.g. a CTGF antisense, ribozyme or triplex agent.

Sequence 2075 BP; 491 A; 558 C; 546 G; 480 T;
                                173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     V38085 standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       254
                                                                          GCAGCCCGCGTGCAAGAGGAACAGTGTCGACGACTGTGGCTGCTGCTGCTGTGTGCGCTG 172
AGCAGCTGGGCGAGCTGTGC
                           CAGGGGGGGGAGAAACTTGC
                                                       GCTGCCCGGCGGCGTGAGCCTCGTGCTGGACGGCTGCGGCTGCTGCCGCGTCTGCGCCA 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCAGCTGGGCGAGCTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGGGCGGGGAGAAACTTGC 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTGCCCGGCGGCGTGAGCCTCGTGCTGGACGGCTGCGGCTGCTGCCGCGTCTGCGCCA 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGCCCGCGCTGCAAGAGGACAGTGCTCGACGACTGTGGGTGCTGCTGCCGAGTGTGCGCTG 172
                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers 130. .1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /*tag= a
/product= "connective tissue growth factor"
                                                                                                                                          65.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2075
                              192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     333
                                                                                                                           0;
                                                                                                                        Score 35.2; D
Pred. No. 0.08
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 35.2; Di
Pred. No. 0.08
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35.2; DB
No. 0.087;
                                                                                                                                       DB
.087;
                                                                                                                         28;
                                                                                                                                                    ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1;
                                                                                                                                                      Length 2075;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 2075;
                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
CCCCS TIREFERRATE TO PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TO THE PERSON TH
                                                                                                                                                                                                                                                              17-NOV-1998.
31-MAY-1996;
31-MAY-1996;
30-AUG-1991;
14-DEC-1993;
10-FEB-1995;
02-JUN-1995;
Grotendorst GR;

WPI; 99-023382/02.

P-PSDB; W81425#.

Use of connective tissue growth factor - for inducing bone, tissue or cartilage formation in a patient or for inducing wound healing bisclosure; Fig IC; 30pp; English.

This represents the genomic DNA sequence of connective tissue growth factor (CTGF). This can be used in the method of the invention for inducing bone or tissue formation that comprises administration to a patient, a composition comprising CTGF and a carrier. CTGF can also b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                exon
                                                                                                                                                                                                                        (UYMI-) UNIV MIAMI.
                                                                                                                                                                                                                                                                                                                                                                                                                US5837258-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                          polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Connective tissue growth factor (CTGF) genomic DNA sequence. CTGF; connective tissue growth factor; bone formation; tissue; arthrit wound healing; cartilage formation; osteoporosis; osteoarthritis; burn osteochondrytis; skeletal disorder; hypertrophic scar; protease; PDGF; degradation; vascular hypertrophy; platelet derived growth factor; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Key
5'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      V65380;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25-JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            standard;
                                                                                                                                                                                                                                                                US-656393.
US-752427.
US-167628.
US-386680.
US-459717.
                                                                                                                                                                                                                        SOUTH FLORIDA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                           /*tag= n
3984. 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /number 1
1203 1425
/*tag a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /*tag= 1
/number= 4
2632..2925
/*tag= m
/number= 5
2928..4212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /*tag= g
/number= 2
1426. 1651
/*tag= h
/number= 2
1652. 1902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2245.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /number= 4
2245. .2631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /*tag= /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               number-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
1. .1022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     '+tag-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             number-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product= "CTGF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'note- "contains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          )er= e
.1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .1088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 2928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  introns"
      þ
```

```
THE PRESENTATION OF THE PRESENTATION OF THE PRESENTATION OF THE PROPERTY OF THE PRESENTATION OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 នននិននិនិន
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                             misc_feature
                                                                                                                    misc_feature
                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                tata_signal
                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human connective tissue growth factor gene.

Connective tissue growth factor; CTGF; mitogen; cell proliferation; wound healing; cancer; tumour; fibrosis; glaucoma; atherosclerosis; diagnosis; therapy; antisense; triple helix; ribozyme; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      used in a method for inducing wound healing. The methods can be used for inducing bone, tissue or cartilage formation in disorders such as osteoporosis, osteoarthritis or osteochondrytis, arthritis, skeletal disorders, hypertrophic scars, burns, vascular hypertrophy, or in wound healing. The CTGF and functional fragments are more stable and less susceptible to protease degradation than platelet derived growth factor (PDGF) and other growth factors known to be involved in wound healing. Sequence 4212 BP; 1038 A; 1080 C; 1086 G; 1086 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26-APR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      T58534 standard; cDNA; 4214 BP
T58534;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGGGCGGGGAGAAACTTGC 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCAGCTGGGCGAGCTGTGC 1340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6.4%;
illarity 65.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                         /*tag= g
/label= T-beta-RE
/note= "transforming c
element (Claim 32)"
                                                                                                                                                                                                                                                                                                                                                                                                     /label= NF-1_like
                                                                                                                                                                      /note= "ti
766. .770
                                                                                                                                                                                                                                                                                                                                 element (Claim 31)
667. .679
                                                                                                                                                                                                                                                                                                                                                                                                                                                           /label= AP-1
630. .642
                                          /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /*tag= a
/note= "promoter region (-823 to +200 relative
to the transcription start site)"
                                                                               /*cag= ]
/label= SP-]
                                                                                                                    782. .787
                                                                                                                                                                                                                                                                                                                                                                  /*tag= f
/note= "transforming
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    443. .452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                              794. :800
                                                                                                                                                                                                           /label= TIE-like
                                                                                                 *tag=
                                                                                                                                    'label= CATbox
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /*tag= c
/label= CArG_box
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /label= AP-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     *tag=
                           .818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 539
                                                                                                                                                                                    "transforming
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 35.2; DB 1;
Pred. No. 0.12;
0; Mismatches 28
                                                                                                                                                                                                                                                                           growth factor-beta response
                                                                                                                                                                                                                                                                                                                                                                    growth factor-beta response
                                                                                                                                                                                      growth factor-beta inhibito"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 4212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
     RESULT
T59618
ID T5
AC T5
AC T5
DT 31
                                                                                                                                               밁
                                                                                                                                                                             Š
                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 52
                                                                                                                                                                                                                                                                                                                                                                  S Claim 22; Page Fig 1C; 76pp; English.

Chaim 22; Page Fig 1C; 76pp; English.

Chaim 23; Page Fig 1C; 76pp; (M09089), a PDGF-immunocrelated protein tissue growth factor (CTGF) (M09089), a PDGF-immunocrelated protein that may play a significant role in the normal development, growth and repair of human tissue and which probably functions as a growth factor in wound healing. The gene was isolated from a human in the property using a partial gene fragment as probe. A CTGF CDNA clone (see also T45360) has also been obtd. The 5 nontranslated region of the CTGF gene functions as a transforming growth factor-beta (TGF-beta) inducible promoter. The TGF-beta regulatory element was identified (see also T49433) and can be used to identify cpds. the affect CTGF expression.

Sequence 4214 BP; 1039 A; 1079 C; 1006 G; 1090 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               05-DEC-1996.
31-MAY-1996; U08140.
31-MAY-1996; WO-U08140.
(UVSF-) UNIV SOUTH FLORIDA.
Bradham DM, Grotendorst GR;
WPI; 97-042659/04.
                                                                                                                                                 1323
   Connective tissue
                    T59618;
31-MAY-1997
                                                         T59618
                                                                                                                                                                                   173
                                                                                                                                                                                                                                                         113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Connective tissue growth factor coding sequence and protein in the treatment of proliferative disorders and to accelerate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P-PSDB; W09089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             polya_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  healing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO9638172-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                polya_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       intron
                                                                                                                                                                                                              GCTGCCCGGCGGCGTGAGCCTCGTGCTGGACGGCTGCGGCTGCTGCCGCGTCTGCGCCA 1322
                                                                                                                                                                                                                                 AGCAGCTGGGCGAGCTGTGC 1342
                                                                                                                                                                               CAGGGCGGGAGAAACTTGC 192
                                                         standard; DNA; 4214
                                                                                                                                                                                                                                                                                                         Similarity
(first entry)
                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /label=
824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3986.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7*tag= r
906.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2634.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note= "in-frame
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         function=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    codon_start=
091. .1204
                                                                                                                                                                                                                                                                                                         65.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .3991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .4214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .2306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .2633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SP-1
 factor gene
                                                         ВP
                                                                                                                                                                                                                                                                                    Score 35.2; DB Pred. No. 0.12; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        transcription start site
                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               stop codon at bases 2928-2930"
                                                                                                                                                                                                                                                                                                                      DB 1;
                                                                                                                                                                                                                                                                                        28;
                                                                                                                                                                                                                                                                                                                      Length 4214;
                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               - used
```

Gaps

0

Кеу

```
WO9638168-A1.
05-DEC-1996;
31-MAY-1996; U08210.
31-MAY-1996; WO-U08140.
(GROT/) GROTENDORST G R.
   Connective Tissue Growth Factor composition - for inducing bone, tissue and cartilage formation and wound healing Disclosure; Fig 1Cl-3; 60pp; English.

The CTGF gene (T59618) codes for connective tissue growth factor (W12694), a cysteine-rich mitogenic protein which is selectively induced in fibroblasts after activation with transforming growth
                                                                 WPI; 97-042658/04.
P-PSDB; W12694.
                                                                                  Grotendorst GR;
                                                                                                                                                   polya_signal
                                                                                                                                                                    polya_signal
                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                               tata_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_teature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Connective tis; wound healing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tissue
                                                                                                                                                                 /note= "in-frame
3986. .1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sue growth fact
osteoporosis;
                                                                                                                                         /*tag=
                                                                                                                                                         /*tag=
                                                                                                                                                                                                     /*tag= q
/label= Intron-4
                                                                                                                                                                                      *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          630. .642
                                                                                                                                                                                                                                                                                                                                                             codon_start=
091. .1204
                                                                                                                                                                                                                                                                                                                                                                                                *tag= 1
label= SP-1
                                                                                                                                                                                                                                                                                                                                                                                                                                               794. .800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /*tag= d
/label= NF-1_like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /#tag= c
/label=_CArG_box
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /*tag= b
/label= AP-I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                  abel= Intron-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          label= C/
82. .787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        note= "CTGF
                                                                                                                                                                                                                                                                                               abel= Intron-2
                                                                                                                                                                                                                                                                                                                                            .abel= Intron-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                       label-
                                                                                                                                                                                                                                                                                                                                                                                          .1090
                                                                                                                                                                                                                                                                                                                                                                                                                     .818
                                                                                                                                                                                                                       . 2633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 452
                                                                                                                                                                                                                                          . 2246
                                                                                                                                                                                                                                                                    .2034
                                                                                                                                                                                                                                                                                                                 .1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       e
TIE_like
                                                                                                                                                                                                                                                                                                                                                                                                                                                        SP-1
                                                                                                                                                                                                                                                                                                                                                                                                                             TATAbox
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATbox
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    factor; CTGF; bone;
sis; osteoarthritis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene promoter region'
                                                                                                                                                                                                                                                                                                                                                                        1025.
                                                                                                                                                                          stop
                                                                                                                                                                                                                                                                                                                                                                        .1028
                                                                                                                                                                          codon
                                                                                                                                                                          at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cartilage; vulnerary; osteochondrytis; ss.
                                                                                                                                                                        position 2928-2930
                                                Query Match
Best Local S
Matches 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         88888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 52
                                               respectively.
Sequence 1285
                                                              administering CTGF-3
                                                                                                                                                                                                                                                     WPI;
                                                                                                                                                                                                                 osteoporosis
                                                                                                                                                                                                                       diagnosis and treatment
                                                                                                                                                                                                                                          P-PSDB; W37946
                                                                                                                                                                                                                                                           (HUMA-) HUMAN GENOME SCI
Chopra A, Ebner R, Ruben
                                                                                                                                                                                                                                   Novel human
                                                                                                                                                                                                                                                                              08-NOV-1996;
                                                                                                                                                                                                                                                                                                 W09821236-A1
22-MAY-1998.
                                                                                                                                                                                                                                                                                                                            mat_peptide
                                                                                                                                                                                                                                                                                                                                              sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1263
                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                       V29260 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1323 AGCAGCTGGGCGAGCTGTGC 1342
                                                                                                                                                                                                                                                                                                                                                                                                                      14-SEP-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          113
                                                                                                                                                                                                                                                   98-297864/26.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGGGCGGGGAGAAACTTGC
Similarity 72.1
44; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity 65.052; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4214 BP;
                                                                                                                                                                                                                                                                               WO-U17856
                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                              BP;
                                                                                                                                                                                                                                                                                                                         /*tag= 2
9..65
/*tag= b
66..758
                                                                                                                                                                                                                                                                                                               /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA;
         6.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  65.0%;
                                              237
                                                                                                                                                                                                                                                                                                                                                                                                                                       1285
                                                                                                                                                                                                                                                                                                                  o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1039 A;
pred. No. 0.2;
mismatches
                                             A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     192
                                                                                                                                                                                                                                                                                                                                                                                                                                       ВÞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
```

intron

exon

exon

intron

exon

introp

exon

BB

Length 1285; Indels

17; 1:

0

Gaps

0

exon

intron

```
SC Claim 2; Fig 1A-B; 87pp; English.

Claim 2; Fig 1A-B; 87pp; English.

Cractor-3 (CTGF-3) protein (see W37946), a novel member of the factor-3 (CTGF-3) protein (see W37946), a novel member of the growth factor superfamily. It was discovered in a cDNA library of the growth factor superfamily. It was discovered in a cDNA library of the gene has also been identified in cDNA libraries from ovary, testis, heart, lung, skeletal muscle of normal medulla, adrenal cortex, thymus, prostate, small intestine are vectors, host cells and recombinant methods for producing CC GTGF-3 polypeptides. CTGF-3 nucleic acid sequences or their fragments, e.g. primers or probes, can be used to diagnose diseases where CTGF-3 expression is enhanced, e.g. cancer, arthritis, CC decreased or increased such as in osteoporosis. Discorders characterised by candinistaring CTGT-1 and increased or increased levels of CTGF-3 can be treated by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ractor beta. The gene may be incorporated into a vector and utilised in the prodn. of recombinant CTGF in prokaryotic or eukaryotic host cells, or used to design probes and primers. promoter region of the gene can be used in methods for the identification of cpds. which enhance the activity of CTGF, fi healing.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human connective tissue growth factor-3 gene. Connective tissue growth factor-3; CTGF-3; huarthritis; fibrosis; osteoporosis; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAGCCCGCGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCCGAGTGTGCGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTGCCCGGGGGGGGTGAGCCTCGTGCTGGACGGCTGCGGCTGCCGCGTCTGCGCCA 1322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    connective tissue growth factor 3 gene - useful id treatment of e.g. cancer, arthritis, fibrosis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                      polypeptides and anti-CTGF-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          owth factor-3; CTGF-3; human; cance
osteoporosis; diagnosis; therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score
Pred.
  418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1078 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             35.2;
No. 0.
  ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .12;
  389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          human; cancer;
is: therapy; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1009
<u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ۳.
                                                   antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 4214;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   useful for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
T4020LT 1
T4020 ID T4022
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T402
AC T4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 14
Q36032
ID Q36032
AC Q36032
DT 24-MAY
DE Chicke
KW string
OS Gallus
PN W09300
PD 07-JAN
PF 25-JUN
PR 25-JUN
PR (CNRS
PI MATTIN
PR (STRIN
PR (CTRS
PI MATTIN

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ΩĄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                    Nicotiana tabacum cv. xa
WO9628014-Al.
19-SEP-1996.
05-MAR-1996; U03044.
07-MAR-1995; US-399561.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      07-JAN-1993.
25-JUN-1992; F00589.
25-JUN-1991; FR-007807.
(CNRS ) CENT NAT RECH SCI.
Martinerie C, Perbal B;
WPI; 93-036377/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , 113
DNA encoding lycopene cyclase or mutants resistant to herbicides used to control carotenoid biosynthesis and to produce herbicide resistant plants and algae
                                                                                                                                             (YISS ) YISSUM RES & DEV CO.
Cunningham FX, Gantt E, Hi
WPI; 96-433414/43.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tobacco lycopene cyclase cDNA. Lycopene cyclase; carotenoid; transgenic plant; crop protect
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nucleotide sequences hybridising to regions of chicken nov gene useful as probes for detecting complementary sequences to evaluate development and/or differentiation of tumours claim 1; Page 26; 67pp; French.

The chicken nov gene is stimulated in avian nephroblastoma induced by avian myeloblastoma virus but not in normal adult kidney. A 1975bp cDNA sequence was isolated from a gene bank prepared from chicken embryonic fibroblasts screened with a tumour-derived probe. Fragment II is derived from the nov gene; nucleotide sequences which hybridise to Fragment II under stringent conditions (i.e. 50% formamide, 5 x SCC) are claimed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                T40206 standard; cDNA to mRNA; 1614 T40206;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24-MAY-1993 (first entry)
Chicken nov gene fragment II.
avian nephroblastoma; avian myeloblastoma virus;
stringent hybridisation; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tobacco; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gallus domesticus.
WO9300430-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q36032 standard; cDNA; 684 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               l7-DEC-1996 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  173 CAGGGCGGGGAGAACTTGCTACC 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          196 C 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    204 C 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAGCCCGCGCTGCAAGAGGACAGTGCTCGACGACTGTTGGCTGCTGCTGCTGCTG 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGCAGCGCGGCGAGAGCTGCTCCC 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTGCGCCCCGGGAGTGCCCGCCGTGCTGGACGGCTGCCGCTGCTGCTGCGTGTGCGCCC 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clase; carotenoid; beta-carotene; herbicide resistance;
plant; crop protection; pigmentation; crtL gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                    cv. xanthii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6.0%;
                                                                                                                                                                                Hirschberg J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 32.8;
Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ВÞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 684;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

```
밁
                                                                               δÃ
                                                                                                                                                                           밁
                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                &8.555555555555588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 2; Page 39-40; 59pp; English.

A CDNA clone (T40206), corresponding to the crtL gene, codes for the lycopene syntase of tobacco cv. xanthii. It was isolated Cfrom a leaf cDNA library using the Synechbococcus lycopene synthase Cley gene (T40205) as probe. A tomato crtL cDNA (T40207) was Similarly isolated. Lycopene synthase genes can be used to control Ccarotenoid biosynthesis in bacteria, algae and plants, e.g. to Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional value (e.g. beta-carotene prodn.), Climprove nutritional valu
                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                           816
                                       439 TCTCTCACGGAGCATGACATGGCATCTGGAGATGGCAAT
                                                                                                                                                                                                              379 AAATGCCTGAAATTCCCCCTTCCTACAATATTCAGTAACCAAGTCTTCCAACAGATTTGTT 438
756 TGGCTTATCATACTGAACAAGACATCTTGAGAAGCCAGT
                                                                                                                                                                  AAAGGGATGTTCCTCCACTTCTGCCAATATGCCATAAGCTACTTGATATCCAGGTTTATA 757
                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                     5.8%;
57.6%;
                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                     Score 31.8;
Pred. No. 1;
                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                            DB
                                                                               477
                                                                                                                                                                                                                                                                                                                                         42;
                                                                                                                                                                                                                                                                                                                                                                                                                            1; Length 1614;
                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                         0
```

Search completed: May 3, 1999, 23:14:13 Job time: 1325 sec

```
Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OM nucleic -
                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                          Score
                             33
33
                             .
...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nucleic search, using sw model
                                                                       Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                     6.5
2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-037-460-1_COPY_61_609
549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2002476 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGAGCGTCTTGCTGCTGAC......GGAAATGGTTAAATCCACGC 549
                                                                                                                                                                                                              em_est16:*
em_est17:*
em_est18:*
em_est19:*
                                                                                                                                                                                                                                                                       em_est7:*
em_est8:*
em_est8:*
em_est1:*
gb_est1:*
gb_est5:*
gb_est5:*
gb_est6:*
gb_est6:*
gb_est10:*
gb_est10:*
gb_est10:*
gb_est10:*
gb_est11:*
gb_est11:*
gb_est11:*
gb_est12:*
gb_est10:*
gb_est12:*
gb_est11:*
gb_est12:*
gb_est11:*
gb_est12:*
gb_est11:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GenCore version 4.5
Copyright (c) 1993 - 1998 Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    em_est2:*
em_est3:*
em_est4:*
                                                                    Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_est6:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_est5:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_est1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3, 1999, 23:57:01; Search time 188.7 Seconds (without alignments)
4438.039 Million cell updates/sec
                        599
398
                        23
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           762712212 residues
                                                                      ä
                        AA540522
R48383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ltd.
                                                             Description
                AA540522 LD20232.5
R48383 yj67h05.rl
                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                              ACCESSION
NID
                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                         RESULT 1
AA540522/c
LOCUS
                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ဂ ဂ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32...

32
                                                                      fruit fly.

Drosophila melanogaster

Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;

Pterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea;

Pterygota; Drosophila.

1 (bases 1 to 599)

Harvey,D., Hong,L., Evans-Holm,M., Pendleton,J., Su,C.,

Brokstein,P., Lewis,S. and Rubin,G.M.

BDOP/HHMI Drosophila EST Project

Unpublished (1997)
Contact: Harvey, D.
G. M. Rubin-Molecular and Cell Biology
University of California Berkeley
539 LSA, Berkeley, CA 94720-3200, USA
                                                                                                                                                                                                                                             g2286956
EST.
                                                                                                                                                                                                                                                                         AA540522 599 bp mRNA EST 28-NOV-1998 LD20232.5prime LD Drosophila melanogaster embryo BlueScript Drosophila melanogaster CDNA clone LD20232 5prime similar to U72331: Drosophila melanogaster putative RNA-binding protein (how) mRNA, complete cds, mRNA sequence.

AA540522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AU018204

AA49580

W01086

AA168292

AA264358

AA439172

AA078722

AA078722

AA077213

AA485611

AA875541

AA075541

AA07554

AA0117046

T80017046

T80017046

T80017046

AA027418

AA027418

AA027418

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA027414

AA0274
                                                                                                                                                                                                                                                                                                                                                                                                                               ALIGNMENTS
```

D31399 Human fetal
AII93129 qe40ell.s
AA324516 EST77356
AA434839 ve17b08.r
AII73346 q145907.x
AA196958 zq09f07.r
AA802895 GM0653.5
AA504577 aA60f06.r
W85569 mf58a01.r1
C79130 Mus musculu
C79086 Mus musculu
AA301623 EST14659
W79063 zd80a01.s1
AA594191 nn29a08.s

T20823 2831 Lambda

AA202628 ID02785.5 AA159468 vz75511.r A1028047 ow43611.r A1028047 ow43611.x AA027418 mi03167.r A1266608 qn29d01.x AA887391 oj37a05.s A1262853 qk36d04.x A1272063 qj89d05.x AA844402 aj19e03.x AA844402 aj19e03.x AA1262564 qk42e02.x AA1022804 ow55e07.x

AI088087 oz94h04.x AA584389 nn77c08.s

W01086 za59h04.r1
AN168292 ms22f08.r
AN264358 LD08029.5
AN497872 LD3279.5
AN978722 LD3279.5
AN07070 y172912.s1
AN607213 vm84408.r
AN407213 vm84908.r
AN407541 UT.R E0-c
AN101704 COVOLO1.x
T80915 yd25902.r1
AN402628 LD02785.5

AU018204 Mus muscu AA449580 zx06e08.r W01086 za59h04.rl

Result No.

```
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
R48383/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                  TITLE
                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGCCGCCTGGAGCAATAATTATGCGGTGGACTGCCCTCAACACTGTGACAGCAGTGAGT 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCAAGTGCTGCGGGTCATGGAGGACCACACTGCGGCGCCTGTTGCTGCTGCTGCTGCCT 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAAAAGCAGCCCGCGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCTGCCGAGTGT 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGCCTGAGCCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCGCTGCAGGGCGGG 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAGCAACTGGGCCAGATAGTCGGCGATGCTCTGTGTGCTGCTGCTGCTGCTGCTGGGGG 477
                                                                            Contact: Wilson WashU-Merck EST
                                                                                                                                                                                                                                                                                                                                                                                                                         9810409
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R48383
yj67h0
                                                                                                                                                                                                                                                                                                                                                                                                                                                          R48383
                                               Unpublished
                                                                                                                                                                            Deuterostomia; Chordata; Vertebrata; Gnathostomata; Os:
Sarcopterygii; Choanata; Tetrapoda; Amniota; Mammalia;
Eutheria; Archonta; Primates; Catarrhini; Hominidae; H
                                                                                                                                                                                                                            Eukaryotae; Metazoa; Eumetazoa; Bilateria; Coelomata;
                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HEXOKINASE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: http://www.fruitfly.org/EST, Plate: 202 row: C column: 8 High quality sequence stop: 564.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST 18-MAY-1995
187h05.rl Homo sapiens cDNA clone 153849 5' similar to gb:M75126
200KINASE, TYPE I (HUMAN);.
                                             WashU-Merck EST ublished (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Drosophila melanogaster"
/note="Organ: embryo; Vector: BlueScript SK; Site_1:
/note="Organ: embryo; Vector: BlueScript SK; Site_1:
EcoRI; Site_2: XhoI; Constructed using Stratagene ZAP-cDNA
Synthesis kit. Oligo dT-primed and directionally cloned at
EcoRI and XhoI in BlueScript SK(+/-)"
/db_xref="BDGP_EST:BDcln019291"
/db_xref="Taxon:7227"
/db_xref="Taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  643 9947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="LD Drosophila melanogaster embryo BlueScript"
/sex="male and female"
/dev_smale and female"
/dev_state and female"
/dev_state of 24 hours mixed stage embryonic"
/lab_host="SOLR"
164 c 138 g 92 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6.5%;
                                                              Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 35.8; DB Pred. No. 0.62; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                138 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            est@fruitfly.berkeley.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62;
                                                                                                                                                                           Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     599;
                                                                                                                           Marra, M.,
                                                                                                                                                                                                           Osteichthyes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
RESULT 3
AU018204/c
                                                                                                                       FEATURES
                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                              AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   158 GCCGAGTGTGCGCTGCAGGGCGGGGAGAACTTGCTACCGCACAGTCTCAGGCATGGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            338 CCTGCAACTGCCAGTCA 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTTCCATCTCCAGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGGGAGGGGAACCCCAAGGATGGGCTTTGGAGCCCCAGAAGGCCTGTCAGGTGGTGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAGGCAGTGCCCCCGGGAGGGCCCGGCAGTGTCTGCTGGTGATAATACATTTCACA 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCATGAAGTGTGGCCCGGGGCTGAGGTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCCACAGTGGGTGCCCAGGAGGGAGGGAAGCAGCTAATGCTATGCCCCACACTCGCCTT 210
                                                                                                                                   Submitted (16-JUN-1998) to the DDBJ/EMBL/GenBank databases. Hirofumi Doi, Japan Science and Technology Corporation (JST), Doi Bioasymmetry Project, ERATO; WBG Marive East 12F, 2-6 Nakase, Mihama-ku, Chiba, Chiba 261-7112, Japan (E-mail:hd@bioa.jst.go.jp, Tel:+81-43-299-1351, Fax:+81-43-297-7530)
                                                                                                                                                                                                                                                                        KO,M.S.H., Kitchen,J.R., Wang,X., Threat,T.A., Sun,T., DePalma,G.E., Liang,Y., Kargul,G.J., Sharara,R. and Doi,H. Systematic analyses of genes expressed in 2-cell stage mouse embryos (The ERATO/Doi Project at Wayne State University) Unpublished (1998)
                                                                                                                                                                                                                          2 (bases 1 to 253)
Ko,M.S.H. and Doi,H.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA sequence.
AU018204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus 2-cell
                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. I
Tel: 314 286 1800
Fax: 314 286 1810
Email: est@watson.wustl.edu
High quality sequence stops: 257
Source: IMAGE Consortium, LLNL
                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus (strain:C57BL/6J) 2-cell stage embryo cDNA to mRNA
                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia;
Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                 clone:J0750B07.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AU018204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     70
                                 /organism="Mus musculus"
/strain="C57BL/6J"
/db_xref="taxon:10090"
/clone="J0750B07"
/dev_stage="2-cell stage embryo" 60 c 65 g 61 t
                                                                                                                     ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/clone="153849"
107 c 107 g 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   253 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 embryo cDNA 3'-end sequence, clone J0750B07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 107 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 33.8;
No. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     111 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                102;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14-OCT-1998
                                                                                                                                                                                                                                                                                                                                                                                              Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contact the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

BASE COUNT

61

6 others

```
BASE
                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA449580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
    COUNT
                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGGACCAACAAGAAG 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTTCCCCCACCGTTAATGTGTCCCCCACCGAGCACCAGACTGCAGAAAGAGGCAATAATA 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGTGAGAGAAGAAG 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTCTTCCAACAGATTTGTTTCTCTCACGGAGCATGACATGGCATCTGGAGATGGCAATA 478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCTGTGACAGGGGGACGGGAAAATGCCTGAAATTCCCCTTCTTCCAATATTCAGTAACCA 418
                                                                                                                                                                                                                                                                                                                                                                          Contact: Wilson RK
WashU-Merck EST Project
Washington University School of Medicine
Washington University School of Medicine
Washington University School of Medicine
Washington University School of Medicine
Washington University School of Medicine
                                                                                                                                                                                                                                                                                            Email: est@watson.wustl.edu
This clone is available royalty-free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information. Seq primer: -28ml3 rev2 ET from Amersham.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 (bases 1 to 360)
Hillier,L., Allen,M., Bowles,L., Dubuque,T., Geisel,G., Jost,S. Kucaba,T., Lacy,M., Le,N., Lennon,G., Marra,M., Martin,J., Moore,B., Schellenberg,K., Steptoe,M., Tan,F., Theising,B., White,Y., Wylie,T., Waterston,R. and Wilson,R. WashU-Merck EST Project 1997
                                                                                                                                                                                                                                                                                                                                                       Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Ho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA449580 360 bp mrna EST 04-JUN-1997 zx06e08.rl Soares total fetus Nb2HF8 9w Homo sapiens cDNA clon 785702 5' similar to SW:ACON_BOVIN P20004 ACONITATE HYDRATASE, MITOCHONDRIAL PRECURSOR ;, mrna sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g2163330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA449580
  92
                                                                               Conservative
                             /lab_host="DH10B"
<1. .>360
                                                        /clone_lib="Soares total fetus Nb2HF8
/dev_stage="8-9 weeks"
                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                      . 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           52.6%;
              xref="GDB:5983320"
 ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 32.6; DB 31;
Pred. No. 5.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
58 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 253;
                                                                                                                                                                                                                                                                                                                                                                                  MO 63108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
     MRNA
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
W01086/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pocas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g1273230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          W01086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  W01086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         numan.
       60
```

```
206 CAGGCATGGATGGCATGAAGTGTGGCCCCGGGGCTGAGGTGTCAGCCTTCTAATGGGGAGG 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGACGTTTGACCCAGGGCAGGACACCTACCAGCACCCAAGGACAGCAGCAGCGGGCAGC 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCCTTTTGGTGAAGAGTTTGGTATCTGCAAAGACTGTCCCTACGGCACCTTCGGGATGG 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGGGCACGGATGGCAAGAAGTTCAGGCTGGAGGTCCGGATGCAGATGAGCTTCCCAAAGG 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTGCAGAGAGACCTGCAACTGCCAG 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGTGGACGTGAGCCCCACCAGCCAG 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Wilson RK
Washingten University School of Medicine
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis,
Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                           This clone is available royalty-free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information. Seq primer: mob.REGA+ET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawki Holman,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Parsons,J., Rifkin,L., Rohlfing,T., Soares,M., Tan,F Trevaskis,E., Waterston,R., Williamson,A., Wohldmann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unpublished (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The WashU-Merck EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: est@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; F
1 (bases 1 to 242)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                za59h04.rl
296887 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            l Similarity
75; Conserv
                                                                                                                                                                                                                                                                                                                                                                                        quality sequence stop: 176.
                                                                                                           Conservative
                              /dev_stage="20 week-post conception fetus"
/lab_host="DH10B (ampicillin resistant)"
                                                                             /sex="male"
                                                                                           /clone_lib="Soares fetal liver spleen lNFLS"
                                                                                                                                                                                                                                                                                                                                                                      ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                242 bp
Soares fetal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5.98;
57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 32.4; D
Pred. No. 6.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
liver
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST 18-APR-1996 spleen 1NFLS Homo sapiens cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Elliston, K., Hawkins, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360;
                                                                                                                                                                                                                                                                                                                                                                                                                                               contact the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Marra,M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
AA168292
                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            din
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         127 AAAAGGAAGAGGTAGTGAAAGAGAA 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                482 TGAGAGAAGAAGTTGTGAAAGAGAA 506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       422 CTTCCAACAGATTTGTTTCTCTCACGGAGCATGACATGGCATCTGGAGATGGCAATATTG 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTCGCTCCAAATATTCTTTCTCAATTAGAATGTCAATGCATTTCTGGGTGTTATTTTTA 128
                                                                                                                                                                                                                                                                                                                                                                                                 Seq
                                                                                                                                                                                                                                                                                                                                                                                                                     Fax: 314 400 1007
Email: mouseest@watson.wustl.edu
This clone is available royalty-free through LINL; contact the
This clone is available royalty-free through LINL; contact the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Marra M/Mouse EST project
WashIngton University School of Medicinep
4444 Forest Park Parkway, Box 8501, St. Lo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA168292 355 bp mRNA EST 12-FEB-1997 ms22f08.rl Stratagene mouse skin (#937313) Mus musculus cDNA clone 607719 5' similar to 9b:X03212 KERATIN, TYPE II CYTOSKELETAL 7 (HUMAN); gb:X03491 Mouse mRNA for type II 57 kd keratin (MOUSE);,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The WashU-HHMI Mouse 
Unpublished (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Marra,M., Hillier,L., Allen,M., Bowles,M., Dietrich,N., Dubuque,T., Geisel,S., Kucaba,T., Lacy,M., Le,M., Martin,J., Morris,M., Schellenberg,K., Steptoe,M., Tan,F., Underwood,K., Moore,B., Theising,B., Wylie,T., Lennon,G., Soares,B., Wilson,R. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Waterston, R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Snw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Eutheria; Rodentia; Sciurognathi; Muridae; M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mRNA sequence.
AA168292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                 primer: -28m13 rev1 ET from Amersham
h quality sequence stop: 329.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 355)
                    100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  314 286 1800
314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                    ρ
                                                                                                                                                                   /note="Vector: pBluescript SK-; Site_1: EcoRI; Site_2: XhoI; Cloned unidirectionally. Primer: Oligo dT. Whole skin from 11 week old C57BL/6 female mice. Average insert size: 1.0 kb; Uni-ZAP XR Vector; -5' adaptor sequence: 5' GAATTCGGCACGAG 3' -3' adaptor sequence: 5' CTCGAGTTTTTTTTTTTTTTT 3'"
                                                   /dev_stage="11 weeks old"
/lab_host="SOLR (kanamycin resistant)"
                                                                                               /clone_lib="Stratagene mouse
/sex="females"
                                                                                                                                      /db_xref="taxon:10090"
/clone="607719"
                                                                                                                                                                                                                                                                                         /organism="Mus musculus"
/strain="C57BL/6"
                  .>355
76 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                  119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       32.2;
No. 6
                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                             skin (#937313)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    33
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Louis, MO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        242;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
```

Query Match

5.9%;

Score

32

. 2

DB

16;

Length

Ş

47

TGGCCGCCTGGAGCAATAATTATGCGGTGGACTGCCCTCAACACTGTGACAGCAGTGAGT 106

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 7
AA264358/c
                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
      Matches
                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 190 G 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 182 G 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCTGCCGAGTGTGCGCTGCAGGGCGGG 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAACAACCTGGAACCCATCCTTGAGGGCCCACATCAGCAACATGCGGAACAGCTGGAGAC 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAACCAGGTGCTGCAGACCAAGTGGGAGCTGCTGCAGCACGTGGACCTGAACAACTGCA 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAGCGTCTTGCTGCTGACCACGCTCCTCGTGCCTGCACACCTGGTGGCCGCCTGGAGCA 61
                                                                                                                                                                                                                                                                                                                            University of California Berkeley
539 LSA, Berkeley, CA 94720-3200, USA
Fax: 510 643 9947
Email: http://www.fruitfly.org/EST, est@fruitfly.berkeley.edu
Blast expect value = 3.7E-211 on U72331: Drosophila melanogaster
putative RNA-binding protein (how) mRNA, complete cds
Plate: 80 row: C column: 5
Plate: 80 row: C column: 5
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1008029.5prime LD Drosophila Drosophila melanogaster cDNA AA264358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea;
Drosophilidae; Drosophila.
1 (bases 1 to 536)
1 (bases 1 to Fvans-Holm.M. Pendleton.T. Su.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BDGP/HHMI Drosophila EST Project Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G. M. Rubin-Molecular and Cell Biology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Harvey, D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Harvey, D., Hong, L., Evans-Holm, M., Brokstein, P., Lewis, S. and Rubin, G
                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               88; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                fruit fly.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g1900427
                                                                                                      143
     Conservative
                                                                                                                                                                             /organism="Drosophila melanogaster"
/note="Organ: embryo; Vector: BlueScript SK; Site_1:
RooR; Site_2: Who!; Constructed using Stratagene ZAP-cD
Synthesis kit. Oligo dT-primed and directionally cloned
EcoRI and XhoI in BlueScript SK(+/-)"
/db_xref="BDGP_EST:BDCIN007384"
/db_xref="taxon:7227"
/db_xref="taxon:7227"
                                                                                          /clone_lib="LD Drosophila melanogaster embryo BlueScript"
/sex="male and female"
/dev_stage="0 to 24 hours mixed stage embryonic"
/lab_host="SOLR"
171 c 138 g 84 t
                                                                                                                                                                                                                                                                                                                    . 536
                    5.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           48.68;
   0
                    Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. 7.2;
0; Mismatches
   Mismatches
                    32;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      melanogaster embryo BlueScript clone LD08029 5prime, mRNA sequence
                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pendleton, J.,
                                   23;
   75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             93;
                                  Length
 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                   536;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29-NOV-1998
 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                            ZAP-cDNA
cloned at
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

BEST AVAILABLE COPY

G

<u>ئ</u>ر.

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 8
AA439173/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            뭕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                               167
                                                                                                                          466
                                                                                                                             107 GCAAAAGCAGCCCGCGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCTGCCGAGTGT 166
                                                                                                                                                                                                               526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                        47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCGCTGCAGGGGGGGGGAGAACTTGCTACCGC 198
                                                                                        TCAAGTGCTGCGGGGTCATGGGGACCACCACCTGCGGCGCCTGTTGCTGCTGCTGCTGCCT
                                                                                                                                                                        TGAGCAACTGGGGCCAGATAGTCGGCGATGCTCTGTGTGCTGCTGCTGCTGCTGCTGGGGG 467
                                                                                                                                                                                                                 TGGCCGCCTGGAGCAATAATTATGCGGTGGACTGCCCTCAACACTGTGACAGCAGTGAGT 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                194 GAGCCTGAGCCTGGGCTTGGGCCTTGAGCCTGC 163
                                                                                                                                                                                                                                                                                   ch
1 Similarity 50.7%;
77; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCGCTGCAGGGCGGGGAGAAACTTGCTACCGC 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: http://www.fruitfly.org/EST, est@fruitfly.berkeley.edu
Plate: 136 row: E column: 9
High quality_sequence.stop: 431.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        G. M. Rubin-Molecular and Cell Biology
University of Callifornia Berkeley
539 LSA, Berkeley, CA 94720-3200, USA
Fax: 510 643 9947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Harvey, D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Harvey,D., Hong,L., Evans-Holm,M., Pendleton,J.,
Brokstein,P., Lewis,S. and Rubin,G.M.
BDGP/HHMI Drosophila EST Project
Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophilidae; Drosophila.

1 (bases 1 to 546)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA439173

AA439173

LD13657, Sprime LD Drosophila melanogaster embryo BlueScript Drosophila melanogaster CDNA Clone LD13657 Sprime similar to U72331: Drosophila melanogaster putative RNA-binding protei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               fruit fly.
                                                                                                                                                                                                                                                                                                                                                                                                                              196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Drosophila melanogaster"
/note="Organ: embryo; Vector: BlueScript SK; Site_1:
ECORI; Site_2: XhoI; Constructed using Stratagene ZAP-cDNA
Synthesis kit. Oligo dT-primed and directionally cloned at
/db_xref="BDGP_EST:BDcln012884"
/db_xref="BDGP_EST:BDcln012884"
                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon:7227"
/clone="LD13657"
/clone_ilb="LD 15657"
/clone_ilb="LD Drosophila melanogaster embryo BlueScript"
/sex="male and female"
/dev_stage="0 to 24 hours mixed stage embryonic"
/lab_host="SOLR"
/lab_host="SOLR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1998 this sequence version replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cds, mRNA sequence.
                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                          Score 32; DB 23;
Pred. No. 9.1;
0; Mismatches 75
                                                                                                                                                                                                                                                                                                                                                                                                              126 g
                                                                                                                                                                                                                                                                                                                                                                                                                77 t
                                                                                                                                                                                                                                                                                                                Length 546;
                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gi:2151054
                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein (how)
                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           us-09-037-460-1_copy_61_609.rst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ដ
                                                                                                                                                                                                                                                              0
                                                                                                                    RESULT 1
AI011272
LOCUS
         KEYWORDS
                                                    ACCESSION
                                                                                               DEFINITION
                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTINIABED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
NID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                   444
                                                                                                                                                                                                                                                                                                                                                            107
                                                                                                                                                                                                                            384
                                                                                                                                                                                                                                                 167 GCGCTGCAGGGCGGGGAGAAACTTGCTACCGC 198
                                                                                                                                                                                                                                                                                                                                                                     504 TGAGCAACTGGGCCAGATAGTCGGCGATGCTCTGTGTGCTGCTGCTGCTGCTGCGGG 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                           47 TGGCCGCCTGGAGCAATAATTATGCGGTGGACTGCCCTCAACACTGTGACAGCAGTGAGT 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            enterestations de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la companie de la 
                                                                                                                                                                                                          GAGCCTGAGCCTGGGCTTGGGCCTTGAGCCTGC
                                                                                                                                                                                                                                                                                 TCAAGTGCTGCGGGGTCATGGGGAACCACCACCTGCGGCGCCTGTTGCTGCTGCTGTGCCT
                                                                                                                                                                                                                                                                                                                     EST205723
ROVAS70 3'
A1011272
93225104
EST.
                                                                                                               AI011272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Harvey, D.

G. M. Rubin-Molecular and Cell Biology
University of California Berkeley
539 LSA, Berkeley, CA 94720-3200, USA
Fax: 510 643 9947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: http://www.fruitfly.org/EST,
Plate: 327 row: C column: 5
High quality sequence stop: 753.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophilidae; Drosophila.

1 (bases 1 to 756)

Harvey,D., Hong,L., Evans-Holm,M., Pendleton,J., Su,C.,
Brokstein,P., Lewis,S. and Rubin,G.M.

BDGP/HHMI Drosophila EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila melanogaster
Eukaryota, Metazoa, Arthropoda,
Pterygota, Diptera, Brachycera,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA978722
93156138
EST:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              fruit fly.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    238 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                  424 bp mRNA
Normalized rat ovary
end, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /Clone_lib="LD Drosophila melanogaster embryo po72"
/Sex="male and female"
/dev_stagg="0 to 24 hours mixed stage embryonic"
/lab_host="XL1 Blue"
216 c 182 g 120 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /Organism="Drosophila melanogaster"
/note="Organ: embryo; Vector: pOT2; Site_1: EcoRI; Site_2:
XhoI; Sized fractionated cDNAs were directly ligated into
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="LD32729"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          db_xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5.8%;
                                                                           rat ovary,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 32; DB
Pred. No. 9.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                            353
                                                             Bento Soares Rattus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tracheata; Hexapoda; Insecta;
Muscomorpha; Ephydroidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     est@fruitfly.berkeley.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 756;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                 15-JUN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                             clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complete
```

0

B Ş

Ş 밁 Ş

```
JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                         DEFINITION ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                  RESULT
H06070
                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                               NID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Lor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
     TITLE
                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 255 TAATGGGGAGGATCCTTTTGGTGAAGAGTTTGGTATCTG 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       195 CCGCACAGTCTCAGGCATGGATGGCATGAAGTGTGGCCCGGGGCTGAGGTGTCAGCCTTC 254
                                                                                                                                                                                                                                                                                                                                                                                                                                       290 CAAAGCTGGGGAACTTTGGGGCAAAGGCTGTGGCACATG 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTGACGGGCCCAGGAAGACTTGGCAAATGTTAGGGCTGTGGGCTGAGGGGTCACCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rattus sp.
                          Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M. Parsons,J., Rifkin,L., Rohlfing,T., Soarces,M., Tan,F., Trevaskis,E., Waterston,R., Williamson,A., Wohldmann,P. and
                                                                            Eukaryotae: Metazoa; Eumetazoa; Bilateria; Coelomata; Deuterostomia; Chordata; Vertebrata; Gnathostomata; Osteichthy; Sarcopterygii; Choanata; Tetrapoda; Amniota; Mammalla; Theria; Eutheria; Archonta; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 442)
                                                                                                                                                                               y172g12.s1
H06070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9712, Medical Center Drive, Rockville, Tel: (301)-838-3529
Fax: (301)-838-0208
Email: nhlee@tigr.org
Seq primer: M13-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Lee,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (1998)
                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                             g869622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rodentia; Sciurognathi; Muridae; Murinae; Rattus.

1 (bases 1 to 424)

Lee.N.H., Glodek,A., Chandra,I., Mason,T.M., Quackenbush,J.,

Kerlavage,A.R. and Adams,M.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The Institute for Genomic Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rat Genome Project: Generation of a Rat EST (REST) Catalog & Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota;
                                                                                                                                                                      Bonaldo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5.8%;
Similarity 57.6%;
 WashU-Merck EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Index
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Rattus sp."
/note="Organ: ovary; Vector:
Site_2: NotI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:10118"
/clone="ROVAS70"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                      Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              H
                                                                                                                                                                                                                                                                                                                                                                   442 bp
                                                                                                                                                                                                                                                                                                                                                      sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chordata; Vertebrata; Mammalia; Eutheria; thi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 31.8;
Pred. No. 10;
                                                                                                                                                                                                                                                                                                                                                      cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              띪
                                                                                                                                                                                                                                                                                                                                                       43492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pT7T3Pac; Site_1: EcoRI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20850, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bento
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              424;
                                                                                                                                                                                                                                                                                                                                                                     21-JUN-1995
                                                                                                                            Osteichthyes;
                                                       Marra, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                  JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 12
AA607213
                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      321 GAT 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAT
                                                                                                                                                                                                                                                                                                                                                                   g2456106
EST.
                                          MGI:569206
                                                                                                                                                                                                                                                                                                                                                                                                                                       AA607213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
```

```
JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300 GAAGGAGGCTAATGGGTTAAAGTTCATATTCAGGAAGGGCTTTCACATCCATAGTTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               261 GGAGGATCCTTTTGGTGAAGAGTTTGGTATCTGCAAAGACTGTCCCTACGGCACCTTCGG 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240 AGACTGAGGTATCCGTGACAGGGCAGGAAGGCATGTGATGGGTCCTCAGTTCCCAAGTGG 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              201 AGTCTCAGGCATGGATGGCATGAAGTGTGGCCCGGGGCTGAGGTGTCAGCCTTCTAATGG
                                                                                                                                                                                                                                                                                                                                              Rodentia; Sciurognathi; Muridae; Murinae; Mus.

1 (bases 1 to 485)
Marra, M., Hillier, L., Allen, M., Bowles, M., Dietrich, N., Dubuque, T.,
Geisel, S., Rucaba, T., Lacy, M., Le, M., Martin, J., Morris, M.,
Schellenberg, K., Steptoe, M., Tan, F., Underwood, K., Moore, B.,
Theising, B., Wylie, T., Lennon, G., Soares, B., Wilson, R. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         vm84908.rl Knowles Solt clone 1004990 5', mRNA AA607213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           l Similarity
66; Conserv
                                                                                                                                                                      Contact: Marra M/Mouse EST Project
WashU-HHMI Mouse EST Project
Washington University School of Medicinep
4444 Forest Park Parkway, Box 8501, St. Lo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: est@watson.wustl.edu
High quality sequence stops: 354
Source: IMAGE Consortium, LLNL
This clone is available royalty-free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information.
                                                     Fax: 314 &00 10-1
Email: mouseestévatson.wustl.edu
This clone is available royalty-free through LLNL; contact the
This clone is available royalty-free through LLNL; contact the
                                                                                                                           Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                 The WashU-HHMI Mouse EST Project Unpublished (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished
                                                                                                                                                                                                                                                                                                                                   Waterston, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryotae; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Washington University School of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Wilson RK
WashU-Merck EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GDB: G00-416-033
quality sequence stop: 466 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
/clone="43492"
78 c 91 g 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5.8%;
53.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        485 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Solter mouse blastocyst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 31.8;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             57;
                                                                                                                                                                          Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B1 Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MO 63108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       442;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-SEP-1997
                                                                                     contact the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>..</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
FEATURES
                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AA485611/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local 9
                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16
                                                                                                                                                                                      Contact: Wilson RK
Washington University Schoo
4444 Forest Park Parkway, B
Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATCCTAATGA 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGCTCGACGA 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAATGCAGTTTAGCCTTGGCTGCATGTGAGTGCAATGCCAGCCCGGGCTGCAAGAAACCA 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGAACATGGTGTACACATCTGAAATCCCAGTGGGTGGGAGGTAAAGGCCAAGAGAATCAG 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGACCACGCTCCTCGTGCCTGCACACCTGGTGGCCCTGGAGCAATAATTATGCGGTG
                                                                                Email: est@watson.wustl.edu
This clone is available royalty-free through LLNL;
IMAGE Consortium (info@image.llnl.gov) for further:
Seq primer: -28ml3 rev2 ET from Amersham
High quality sequence stop: 385.
Location/Qualifiers
                                                                                                                                                                                                                                                                                             1 (bases 1 to 394)
Hillier,L., Allen,M., Bowles,L., Dubuque,T., Geisel,G., Jost Kucaba,T., Lacy,M., Le,N., Lennon,G., Marra,M., Martin,J., Moore,B., Schellenberg,K., Steptoe,M., Tan,F., Theising,B., White,Y., Wylie,T., Waterston,R. and Wilson,R. WashU-Merck EST Project 1997
                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryotae; mitochondrial eukaryotes; Meta
Vertebrata; Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA48561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 294 bp mRNA EST 11-AUG-1997 2X90908:R1 Soares ovary tumor NDHOT Homo sapiens cDNA clone 811070 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AA485611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
/note="Organ: ovary; Vector: pT7T3D (Pharmacia) with a modified polylinker; Site_1: Not I; Site_2: Eco RI; 1st strand cDNA was primed with a Not I - oligo(dT) primer |
                                                        ∕organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone_lib="Knowles Solter mouse blastocyst
/tissue_type="blastocyst"
/dev_stage="embryo (pre-implantation)"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Mus musculus"
/strain="B6D2 F1/J"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5.8%;
52.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           394 bp
                                                                                                                                                                                                                   School of Medicine way, Box 8501, St. :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 31.8;
Pred. No. 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         124 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
                                                                                                                                                                                                                                                                                                                                                                                                                                      Metazoa; Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62;
                                                                                                                                                                                                                   Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                 Catarrhini; Hominidae;
                                                                                                                                 further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                Geisel,G., Jost,S.,
M., Martin,J.,
                                                                                                                                                                                                                     MO 63108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B1 (larger
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
```

밁 δÃ 밁 Š 밁 Š

ij

```
JOURNAL
MEDLINE
COMMENT
                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 14
AA875541/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3
4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               94 GCGGTGGGCACTGGGACCGCTCCAATTCTCCCACAGGGACGGCAGGATGTGAGGCCCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTGCAGCACTCACCACCCCACGGGGTTGATCTT 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTGAGGTGTCAGCCTTCTAATGGGGAGGATCCT 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: msoares@blue.weeg.ulowa.edu
Oligo-dT track not found, Not I site shown in beginning of sequence
is likely internal to the message. cDNA Library Preparation: M.
Fatima Bonaldo, Ph.D. Clone distribution: clones will be available
                                                                                                                                                                       through Research Genetics
Seq primer: M13 Forward.
                                                                                                                                                                                                                                                                          University of Iowa
451 Eckstein Medical Research Building Iowa
Fal: 319 335 8250
Fax: 319 335 9565
                                                                                                                                                                                                                                                                                                                           Contact: Soares, MB
Program for Rat Gene Discovery and Mapping
University of Iowa
                                                                                                                                                                                                                                                                                                                                                                                                                                              Bonaldo, M.F., Lennon, G. and Soares, M.B. Normalization and subtraction: two appr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Norway rat.
Rattus norvegicus
Eukaryota; Metazoa; Chordata; Vertebrata;
Rodentia; Sciurognathi; Muridae; Murinae;
[1 (bases 1 to 338)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AA875541

338 bp mRNA

UI-R-E0-cv-g-12-0-UI.S1 UI-R-E0 Rattus norvegicus cDNA clone
UI-R-E0-cv-g-12-0-UI 3' similar to gi|2863898|gb|AA800943|AA800943

EST190440 Normalized rat lung, Bento Soares Rattus sp. cDNA 3' end,
                                                                                                                                                                                                                                                                                                                                                                                                      Genome Res.
97044477
                                                                                                                                                                                                                                                                                                                                                                                                                                     discovery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l (bases 1 to 338)
Bonaldo, M.F., Lenno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA sequence.
AA875541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g2980489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       79
/Organism="Rattus norvegicus"
/Strain="Sprague-Dawley"
/Strain="Sprague-Dawley"
/note="Vector: p7773D-Pac (Pharmacia) with a modified
polylinker; Site_1: Not1; Site_2: EcoRI; This library
consists of a mixture of individually tagged normalized
librarles constructed from 8, 12 and 18-day embryo. The
tag is a string of 3-5 nucleotides present between the
                                                                                                                                                     ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <1. .>394
/db_xref="GDB:6041982"
126 c 125 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /tissue_type="ovarian tumor"
/lab_host="DH10B (ampicillin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /sex="Female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone_lib="Soares ovary tumor NbHOT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:9606"
/clone="811070"
                                                                                                                                                                                                                                                                                                                                                                                                            6 (9), 791-806 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               58.58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 31.6;
Pred. No. 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64
                                                                                                                                                                                                                                                                                                                                                                                                                                                  approaches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                resistant)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rattus
                                                                                                                                                                                                                                                                                                     city,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                              to facilitate
                                                                                                                                                                                                                                                                                                     IA 52242,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35
```

NID

밁 δÃ 밁 δÃ

```
JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          UI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 15
AI017046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              190 TGCTACCGC 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                130 AGGACAGTGCTCGACGACTGTGGCTGCTGCCGAGTGTGCGCTGCAGGGCGGGGAGAAACT 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       69 GCTATGTGCCAGCCTCTGCAACTGCTGCTTGGTGTGCGCCAGCGAGGGTGAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9 Teceeccec 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCGGCGCCTTGTCCTGCGCGCTGCGACGTGTCGCGCTGTCCGAGCCCTCGCTGCCCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGGTGGACTGCCCTCAACACTGTGACAGCAGTGAGTGCAAAAGCAGCCCGCGCGCTGCAAG 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria;
Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 371)
NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                        Insert Length: 1051 St
Seq primer: -40m13 fwd.
High quality sequence st
                                                                                                                                                                                                                                                                                                                                        cDNA Library Preparation: M. Bento Soares, Ph.D. cDNA Library Arrayed by: Greg Lennon, Ph.D. DNA Sequencing by: Washington University Genome Sequencing Center Clone distribution: NCI-CGAP clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: www-bio.llnl.gov/bbrp/image/image.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Robert Strausberg, Ph.D. Tel: (301) 496-1550 Email: Robert_Strausberg@nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tissue Procurement: Christopher Moskaluk, M.D., Ph.D., Emmert-Buck, M.D., Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA sequence.
AI017046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AI017046 371 bp mRNA EST 27-AUG-1998 OV01c01.xl NCI_CGAP_Kid3 Homo sapiens cDNA clone IMAGE:1636032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g3231382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity 52.7
68; Conservative
                                                                                                                                                                                                                                    rt Length: 1051 Std Error: 0.00
primer: -40m13 fwd. ET from Amersham
quality sequence stop: 350.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Robert_Strausberg@nih.gov
/Organism="Homo sapiens"
/Organism="Homo sapiens"
/Otea="Organ: kidney; Vector: pT7T3D-Pac (Pharmacia) with a modified polylinker; Site_1: Not I : Site_2: Eco RI; 1st strand cDNA was primed with a Not I - oligo(dT) primer, double-stranded cDNA was ligated to Eco RI adaptors (Pharmacia), digested with Not I and cloned into the Not I and Eco RI sites of the modified pT7T3 vector mRNA source: 2 pooled kidneys. Library went through one round of normalization. Library constructed by Bento Soares and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Not I site and the oligo-dT track which identification of the library of origin the mixture."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /dev_stage="embryonic"
/lab_host="DH10B (Life Technologies)"
112 c 132 g 33 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:10116"
/clone="UI-R-E0-cv-g-12-0-UI"
/clone_lib="UI-R-E0"
                                                                                                                                                                                                                      . 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 31.4;
Pred. No. 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  which allows
rigin of a clone within
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              338;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Michael R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

Search completed: May Job time: 881 sec

4, 1999, 00:11:42

```
밁
                     Q
                                            밁
                                                              Ş
                                                                                     밁
                                                                                                       δÃ
                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                               Matches
                                                                                                                                                   Query Match
                                                                                 199 CGGATGGAGCCTGAGAGAGAGGGGGACAGCTGGCTCCAGGCGGAGATGCTGAAGCAGCAGA 258
                                                            222 GAAGTGTGGCCCGGGGCTGAGGTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGA 281
                                                                                                                                        Local
GGGTGCTGGCTCCACTGACCACTCCACCCCGTCTGTGGGGAGGCGTGGC 307
                                                                                                                              83;
                                                                                                                                        Similarity
                                                                                                                              Conservative
                                                                                                                                                                                            76
                                                                                                                                                                                          /clone="IMAGE:1636032"
/clone_lib="NCI_CGAP_Kid3"
/lab_host="DH10B"
99 c 119 g 77 1
                                                                                                                                                                                                                                               M. Fatima Bonaldo.
                                                                                                                                                                                                                                     /db_xref-"taxon:9606"
                                                                                                                                      5.7%;
                                                                                                                             0
                                                                                                                                      Score 31.4;
Pred. No. 13;
                                                                                                                             Mismatches
                                                                                                                                                                                            77 t
                                                                                                                                                 В
                                                                                                                             86;
                                                                                                                                                 30;
                                                                                                                            Indels
                                                                                                                                                Length
                                                                                                                                                371;
                                                                                                                            0;
                                                                                                                          Gaps
```

0

Database :

GenEmbl: *

Searched: Scoring table: Sequence:

Title: Perfect score:

OM nucleic -

on:

```
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                    Query
Score Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         808301 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-037-460-1_COPY_61_609
549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGAGCGTCTTGCTGCTGAC......GGAAATGGTTAAATCCACGC 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 4.5 Copyright (c) 1993 - 1998 Compugen Ltd
                                                                                                                                                       em_pat:*
em_pl:*
em_pl:*
em_ro:*
em_ro:*
em_sy:*
em_vi:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gb_ba2:*
gb_in:*
gb_om:*
gb_ov:*
gb_pat:*
gb_ph:*
gb_pl1:*
                                                                                                                                                                                                                                                                                                                         9b_pr1:*
9b_pr3:*
9b_pr3:*
9b_pr3:*
9b_ro:*
9b_sy:*
9b_un:*
9b_un:*
9b_htg:*
em_ba:*
em_hun:*
em_hun:*
em_hun:*
                                                                                                                                                                                                                                                                                            em_or:*
em_ov:*
                                                                                                                                             gb_pr1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb_ba1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3, 1999, 14:59:21; Search time 398.05 Seconds (without alignments) 4934.239 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1788773984 residues
                     Ħ
                 Description
                                                                                    REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                             BASE COUNT
ORIGIN
                                                                                                                                                            KEYWORDS
SOURCE
                                                                                                                                                                                         RESULT 1
AR004664
LOCUS
DEFINITION
ACCESSION
  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                           00
                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               000
                                                                                                                                                                                                                                                                                                                                                             source
                                           Unclassified.

1 (bases 1 to 1271)

1 (bases 1 to 1271)

S Hastings,G.A. and Rosen,C.A.
Human vascular IBP-like growth factor
(AL Patent: US 5747280-A 1 05-MAY-1998;

C 10.1271

1.1271

1.1271

1.1274 unknown"

326 q 320 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             549
549
549
340.8
38
                                                                                                                                                                                                                                                                                               35.88
35.86
35.86
35.86
35.86
35.86
36
                                                                                                                                                                               AR004664
Sequence
AR004664
g3965543
                                                                                                                                                            Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 323900
1028
5597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 38962
38962
162485
2267
                                                                                                                                                                                                 1271 bp DNA from patent US 5747280.
                                                                                                                                                                                                                                                                                                                                                                                                   100.0%;
                                                                                                                                                                                                                                                                                                        HUMCONGRO
HUMCONGRO
HSCTGF
HSCTGF
SSUB3916
A28407
A28406
MTV008
                                                                                                                                                                                                                                                                                                       DMODZ4
AF083500
AF083500
AF074604
AF074604
AF074604
AF074604
AF074604
AF074604
AF074604
AF074604
AF074604
AF074604
                                                                                                                                                                                                                                                                                                                                                                                                  MTV008
AF008228
DMTENM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CRU24500
B CRU24500
TMCRETRA
AR018957
I11636
I32210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGNOVMRNA
SC9959
SC9959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6 SC2E1

8 AC004840

8 MUSFISP12B

3 MUSTGFB

3 MUSFISP12A

CJU13063

A28405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HSRNAESM1
HSRNAESM1
RNU80818
AAU02548
MQSVITE
SC2E1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A28444
Score 549; DB 6;
Pred. No. 3.2e-156;
                                                                                                                                                                                                                                                                                            MMHIST431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AR004664
                                                                                                                                                                                                                                                              ALIGNMENTS
       Length 1271;
                                                  ω
                                                  others
                                                                                                                                                                                                                                                                                                U02548 Aedes aegyp
L4842 Aedes aegyp
L4842 Aedes aegyp
AL023797 Streptomy
AL023797 Streptomy
AL023797 Streptomy
AL023797 Streptomy
AC004840 *** SEQUE
M70642 Mouse FISP-
M80263 Mouse mRNA
M70641 Mouse FISP-
M80263 Mouse mRNA
M70641 Mouse FISP-
M80263 Mouse mRNA
M70641 Mouse FISP-
M80263 Mouse mRNA
M70641 Mouse FISP-
M80263 Mouse mRNA
M80263 Mouse mRNA
M80263 Mouse mRNA
M80263 Mouse MRNA
M80263 Gogallus no
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z49939 S.Cerevisia
Z499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AR004664 Sequence
X89426 H.sapiens m
X89426 H.sapiens m
U80818 Rattus norv
                                                                                                                                                                                                                                                                                        Y12290 M.musculus
                                                                                                                                                                                                         04-DEC-1998
```

Result No.

밁 Ω

```
JOURNAL
MEDLINE
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                        KEYWORDS
SOURCE
ORGANISM
                                                              FEATURES
                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                             HSRNAESM1
                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                 TITLE
                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
      $ig_peptide
                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    e 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                 AATCCACGC
                                                                                                                                                                                                                                                                                                                                                                                      TGTGACAGGGGGACGGGAAAATGCCTGAAATTCCCCTTCTTCCAATATTCAGTAACCAAG
                                                                                                                                                                                                                                                                                                                                   AATCCACGC 549
                                                                                                                                                                                                                                                                                                                                                  GTGAGAGAAGATTGTGAAAGAGAATGCTGCCGGGTCTCCCGTAATGAGGAAATGGTTA
                                                                                                                                                                                                                                                                                                                                                             GTGAGAGAAGATTGTGAAAGAGAATGCTGCCGGGTCTCCCCGTAATGAGGAAATGGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGAGTTTGGTATCTGCAAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGAGTTTGGTATCTGCAAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAGAAACTTGCTACCGCACAGTCTCAGGCATGGATGGCATGAAGTGTGGCCCGGGGCTG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCCGAGTGTGCGCTGCAGGCCGG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGAGCGTCTTGCTGCTGACCACGCTCCTCGTGCCTGCACACCTGGTGGCCGCCTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGAGCGTCTTGCTGCTGACCACGCTCCTCGTGCCTGCACACCTGGTGGCCGCCTGGAGC 120
                                                                                                               Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; Holloses 1 to 2006)

Lassalle, P., Molet, S., Janin, A., Heyden, J.V., Tavernier, if lers, W., Devos, R. and Tonnel, A.B.

ESM-1 is a novel human endothelial cell-specific molecular in lung and regulated by cytokines
J. Biol. Chem. 271 (34), 20458-20464 (1996)
                                                                                                                                                                                                                                               H.sapiens
X89426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       549;
                                                         Submitted (06-JUL-1995) P.M. Lassalle, Prof. CALMETTE, LILLE 59019, FRANCE Location/Qualifiers
                                                                                        Lassalle, P.M.
Direct Submission
                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                          g1150418
ESM-1 protein.
                                                                                                                                                                                                                                                                   HSRNAESM1
                                                                                                                                                                                                                    human
                                                                                                          (bases 1 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
    /organism="Homo sapiens"
/db_xref="taxon:9606"
/cell_line="HUVEC"
/clone="All.1"
56. .112
                                                                                                                                                                                                                                                         mRNA for
                                                   . 2006
                                                                                                                                                                                                                                                                  2006
                                                                                                          2006)
                                                                                                                                                                                                                                                                  ďď
                                                                                                                                                                                                                                                      ESM-1 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                            INSERM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                Tavernier, J.,
                                                                            Unite
                                                                                                                                             molecule
                                                                                                                                                                                                                                                                07-0CT-1996
                                                                            416,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                             expressed
                                                                                                                                                                                                                                                                                                                                                   600
                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                            ğ
                                                                            ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                     SOURCE
ORGANISM
                 REFERENCE
AUTHORS
                                                                                           DEFINITION
ACCESSION
                                                                                                              HSRNAESM1
LOCUS
                                                                                                                                                                                δÃ
                                                                         KEYWORDS
                                                                                                                                                              밁
                                                                                                                                                                                                   맑
                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                          멹
                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                     ğ
                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 549; Conserv
                                                                                                                                                                                541
                                                                                                                                                              599
                                                                                                                                                                                                    539
                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SdC
                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                419
                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                     359
                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                           299
                                                                                                                                                                                                                                                                                                                                                                                               239
                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                     179
                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \vdash
                                                                                                                                                             AATCCACGC
                                                                                                                                                                                AATCCACGC
                                                                    g1150418
ESM-1 protein.
                                                                human.
                                                                                           H.sapiens mRNA
X89426
                                                                                                              HSRNAESM1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              623
                                                                                                                                                                               549
                                                                                                                                                             607
```

뭕 Ωy 밁 δÃ

DIN

γQ

밁 δÃ 닭 δÃ Вþ δÃ 밁 Qy 밁 δÃ 뭥 δÃ

밁

```
GTGAGAGAAGATGTTGTGAAAGAGAATGCTGCCGGGTCTCCCGGTAATGAGGAAATGGTTA 540
                                                                                                                                                                                                                                                                                                                                                                                                                     TGTCCCTACGGCACCTTCGGGATGGATTGCAGAGAGACCTGCAACTGCCAGTCAGGCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTGACAGGGGGACGGGAAAATGCCTGAAATTCCCCTTCTTCCAATATTCAGTAACCAAG
                                                                                                                                                                                                                                                                                                                                                    GTGAGAGAAGAAGTTGTGAAAGAGAATGCTGCCGGGTCTCCCGTAATGAGGAAATGGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTGACAGGGGACGGGAAAATGCCTGAAATTCCCCTTCTTCCAATATTCAGTAACCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGGTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGAGTTTGGTATCTGCAAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAGAAACTTGCTACCGCACAGTCTCAGGCATGGATGGCATGAAGTGTGGCCCGGGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAGAAACTTGCTACCGCACAGTCTCAGGCATGGATGGCATGAAGTGTGGGCCCGGGGCTG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCTGCCGAGTGTGCGGTGCAGGGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGAGCGTCTTGCTGCTGACCACGCTCCTCGTGCCTGCACACCTGGTGGCCGCCTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Eutheria; Primates; Catarrhini; Hominidae; H
1 (bases 1 to 2006)
Lassalle,P., Molet,S., Janin,A., Heyden,J.V., Tavernier,
Fiers,W., Devos,R. and Tonnel,A.B.
ESM-1 is a novel human endothelial cell-specific molecul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
llarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
/codon_start=1
/product="ESM-1 secretory protein"
/db_xref="PID:el89266"
/db_xref="PID:el150419"
/db_xref="PID:el150419"
/translation="MKSVILLITILLVPAHLVAAWSNNYAVDCPOHCDSSECKSSPRCK RTVLDDCGCCRVCAAGRGETCYRTVSGMDGMKCGPGLRCQPSNGEDPFGEEFGICKDC PYGTFGMDCRETCNCQSGICDRGTGKCLKFPFFQYSVTKSSNRFVSLTEHDMASGDGN IVREEVVKENAAGSPWRKWLNPR
a 333 c 475 g 575 t
                                                                                                                                                                                        2006 h
                                                                                                                                                                                        r ESM-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
Pred.
                                                                                                                                                                                        protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        549; DB 10;
No. 3.4e-156;
                                                                                                                                                                                                      PRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                  Tavernier, J.,
   molecule
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
   expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                       538
                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
밁
                                                                 ρ
                                                                                    B
           뮍
                          Š
                                                                                                   Š
                                                                                                                            밁
                                                                                                                                           Ş
                                                                                                                                                                밁
                                                                                                                                                                                Ş
                                                                                                                                                                                                       В
                                                                                                                                                                                                                         ğ
                                                                                                                                                                                                                                                            γQ
                                                                                                                                                                                                                                             Ъ
                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
MEDLINE
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 549; Conserv
                                                                                                                                                                                                                                                                                                     121
                                                                                                                            419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sig_peptide
CDS
                                                                                                        421
                                                                                                                                               361
                                                                                                                                                                  359
                                                                                                                                                                                    301
                                                                                                                                                                                                         299
                                                                                                                                                                                                                                              239
                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                    179
                                                                                                                                                                                                                                                                                                                          119
                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                59
                                         TGTGACAGGGGGACGGGAAAATGCCTGAAATTCCCCTTCTTCCAATATTCAGTAACCAAG
                     AATCCACGC
                                                                                                                                                                                                                                        TGTCCCTACGGCACCTTCGGGATGGATTGCAGAGAGACCTGCAACTGCCAGTCAGGCATC 360
                                                                                                                                                                                                                                                                               CGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCCGAGTGTGCGCTGCAGGGCGG
                                                                                                                                                                                                                                                                                                                     AAGAGCGTCTTGCTGACCACGCTCCTCGTGCCTGCACACCTGGTGGCCGCCTGGAGC 60
                                                                                                                                                            TGTCCCTACGGCACCTTCGGGATGGATTGCAGAGAGACCTGCAACTGCCAGTCAGGCATC
                                                                                                                                                                                                   AGGTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGAGTTTGGTATCTGCAAAGAC
                                                                                                                                                                                                              AGGTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGAGTTTGGTATCTGCAAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              in lung and reg
J. Biol. Chem.
96355375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
Direct Submission
Submitted (06-JUL-1995) P.M.
Prof. CALMETTE, LILLE 59019,
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Lassalle,P.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 2006)
                                                                                                                                                                                                                                                                                                                                                                                                                                                               623
                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; ilarity 100.0%; Conservative
                           549
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /Organism="HOMO sapiens"
/db_xref="taxon:9606"
/cell_line="HUVEC"
/clone="A11.1"
56. .112
56. .610
                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
/product="ESM-1 secretory protein"
/db_xref="FID:e189266"
/db_xref="FID:e189266"
/db_xref="FID:e189266"
/db_xref="FID:e189266"
/db_xref="FID:e189266"
/db_xref="FID:e189266"
/db_xref="FID:e189266"
/translation="MKSYLLTTLLVPAHLVAAWSNNYAVDCPQHCDSSECKSSPRCK
RTVLDDCGCCRVCAAGRGETCYRTVSGMDGMKCGPGLRCQPSNGEDPFGEEFGICKDC
PYGTFGMDCRETCNCQSGICDRGTGKCLKFPFFQYSVTKSSNRFVSLTEHDMASGDGN
IVREEVVKENAAGSPVMRKWLNPR"
IVREEVVKENAAGSPVMRKWLNPR"
333 c 475 g 575 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        regulated by em. 271 (34),
                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                   Score 549; DB 40;
Pred. No. 3.4e-156;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cytokines
20458-20464 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lassalle, FRANCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INSERM, Unite 416,
                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                     2006;
                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                           598
                                                              540
                                                                                 538
                                                                                                   480
                                                                                                                       478
                                                                                                                                          420
                                                                                                                                                            418
                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                    358
                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                          298
                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                238
                                                                                                                                                                                                                                                                                                                     178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bd
                                                                                                                                                                                                                                                                                                                                                                                                 0
δÃ
                      g
                                      δÃ
                                                                            Š
                                                                                                                                                                                                                                                                                                           BASE CO
                                                          밁
                                                                                                 멍
                                                                                                                  Q
                                                                                                                                       밁
                                                                                                                                                       δÃ
                                                                                                                                                                              밁
                                                                                                                                                                                             Qy
                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
```

```
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
RNU80818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                             361
                                                       354
                                                                                 301
                                                                                                          294
                                                                                                                                   241
                                                                                                                                                            234
                                                                                                                                                                                      181
                                                                                                                                                                                                              174
                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                   114
                                                                                                                                                                                                                                                                                                                    54
              TGTGACAGGGGGACGGGAAAATGCCCTGAAATTCCCCCTTCTTCCAATATTCAGTAACCAAG
                                               TGTGACAGGGTGACCGGGAGGTGTCTGGACTTCCCCCTTCTTCCAGTATGCAGCAGCCAAG
                                                                                                                                                                                                        CGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCTGCCGAGTGTGCGCTGCAGGGCGG
                                                                                                                                                                                                                                                                                                                                                                       434;
                                                                                                                                                                                                                                                                                                                                                                     h 62.1%;
Similarity 78.6%;
34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wang,X., Brownstein,M.J. and Young,W.S. PG25, a full-length pineal-specific cDNA, cloned display PCR (DDPCR) and rapid amplification of cropublished (1996)

2 (bases 1 to 2009)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (03-DEC-1996) LCMR, Bethesda, MD 20892-4068, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RNU80818 2009
Rattus norvegicus
U80818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wang, X., Brownstein, M.J. and Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryotae; mitochondrial eukaryotes; Metazoa; Vertebrata; Eutheria; Rodentia; Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Norway rat.
Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g1750197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 2009)
                                                                                                                                                                                                                                                                                                                                                                                                                                                  576
                                                                                                                                                                                                                                                                                                                                                                                                                                                  œ
                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="PG25"
/db_xref="pI150198"
/db_xref="pI151198"
/translation="MKSLLLITTLLIPLHIGMAWSAKYAVDCPEHCDNTECRSSLRCK
/translation="MKSLLLITTLLIPLHIGMAWSAKYAVDCPEHCDNTECRSSLRCK
RTVLDDCGCCQVCAAGPGETCYRTVSGMDGVKCGPGLKCHFYSEEDDFGCDEFGVCKDC
PYGTFGMDCKETCNCOSGICDEVTGRCLDFPFFQYAAAKSPSRTSASQTERDAASGDG
NAVREEIGDRNAARSEYMKWLNPR"
NAVREEIGDRNAARSEYMKWLNPR"
346 c 503 g 584 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Rattus norvegicus"
/strain="Sprague Dawley"
/db_xref="taxon:10116"
/tissue_type="pineal gland"
51. .605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ESM-1 gene, encoded /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chote-"similar to human lung endothelial cell-specific ESM-1 gene, encoded by Genbank Accession Number X89426"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         bp mRNA
pineal specific
                                                                                                                                                                                                                                                                                                                                                                  Score 340.8; DB 13;
Pred. No. 5.2e-93;
0; Mismatches 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Young, W.S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HMIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PG25
                                                                                                                                                                                                                                                                                                                                                                                             DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Convent
                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ed by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                : Chordata;
Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drive,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   differential ends (RACE)
                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cds.
                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (RACE)
                         420
                                                                                                                                                                                                                                                                                                                113
473
                                                  413
                                                                          360
                                                                                                                                                                               240
                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                          60
                                                                                                     353
                                                                                                                                                       293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  40688
                                                                                                                                                                                                                                                                                                                                                                  2;
```

```
JOURNAL
MEDLINE
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
AAU02548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Spool
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                               Sgo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTGTGAGAGAGAGATTGGAGACCGGAACGCTGCCCGGCCCTCTGTAAT---GAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTAMATCCGCGC 602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTAAATCCACGC 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTGTGAGAGAAGATTGTGAAAGAGAATGCTGCCGGGTCTCCCGTAATGAGGAAATGG 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGCCCAGCAGGACCTCTGCCTCCCAAACAGAGCGCGATGCAGCCTCTGGAGATGGCAAT 533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTTCCAACAG----ATTTGTTTCTCTCACGGAGCATGACATGGCATCTGGAGATGGCAAT 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             l (bases 1 to 6504)
Chen, J.S., Cho, W.L. and Raikhel, A.S.
Analysis of mosquito vitellogenin cDNA: similarity with vertebrate phosvitins and arthropod serum proteins
J. Mol. Biol. 237, 641-647 (1994)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (15-OCT-1993) Chen J., Michigan State University, Genetics Program, S-138 Plant Biology Bldg., East Lansing, MI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryotae; mitochondrial eukaryotes; Metazoa; Arthropoda;
Tracheata; Insecta; Pterygota; Diptera; Nematocera; Culicoidea;
Culicidae; Aedes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Aedes aegypti UGALS vitellogenin mRNA, U02548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94210487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Aedes aegypti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        48824,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          yellow fever mosquito
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAU02548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 6504)
        USA
AYONTADVHEVRCAAVHLLMRTDPPADMLQRMAEFTHHDPSLYVRAAVKSAIETAALA
                                                                                                                                                                                                                                        /product="vitellogenin"
/db_xref="PID:9472308"
/translation="MLAKLLLLALAGLTAAYQYENSFKGYNPGYKGYDAGYKGYGYDA
                                                                                                                                                                                                                                                                                                                            #102(G/A),
                                                                                                                                                                                                                                                                                           /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="fat bodies
/dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                    /strain="UGALS"
/db_xref="taxon:7159"
/clone_lib="Lambda Za;
                                                                                                                                                                                                                                                                                                                                                                                                          /sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   organism="Aedes aegypti"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6504 bp
                                                                                                                                                                                                                                                                                                                     wobble bases due to individual variation:
), _#123 (G/A), #144 (T/C), #225 (T/C), #231 (C/T),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                   Zap-II Vitellogenic fat body cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20-MAY-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   590
```

MOSVITE LOCUS

밁

밁 δÃ 밁 δÃ 밁 δÃ

SOURCE NID

KEYWORDS

FEATURES

exon

'evidence=experimental

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                          JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6445
                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6385 TACAAGTTCAACTACCCGAAGAGCTGTGTCTACAAGGCATACTAGGAAACGACATTTGCA 6444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6265 ATCAGCAAATACTTCGATGTCCACTGCTTCGAGAAGGATTCCACCCAGGCTAAGAAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATCCCATTTTTGTATGA 6462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGGCAATATTGTGAGA 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAGTAACCAAGTCTTCCCAACAGATTTGTTTCTCTCACGGAGCATGACATGGCATCTGGA 468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAATCCGAGATTGGCCGCGGCTACACTCCGGACTTCAAGAGCTTCGCCCCCACACAGACT 6384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGTCAGGCATCTGTGACAGGGGGACGGGAAAATGCCTGAAATTCCCCTTCTTCCAATAT 408
                                                                                                                                                                                                           1 (bases 1 to 8780)
Romans, P., Tu, Z., Ke, Z. and Hagedorn, H. H.
Romans, P., Tu, Z., Ke, Z. and Hagedorn, H. H.
Analysis of a vitellogenin gene of the mosquito, a
comparisons to vitellogenins from other organisms
Insect Biochem. Mol. Biol. 25 (8), 939-958 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                           Aedes aegypti (clone: 403-1) DNA
Aedes aegypti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6.9%;
1 Similarity 49.5%;
98; Conservation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               vitellogenin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g790834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOSVITE 8780 bp DNA Aedes aegypti vitellogenin (VgA1) gene,
                                                                                                                                                                                                                                                                                                                                                                     Eukaryotae; mitochondrial eukaryotes; Metazoa; Arthropoda;
Tracheata; Insecta; Pterygota; Diptera; Nematocera; Culico
                                                                                                                                                                                                                                                                                                                                                  Culicidae; Aedes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1748
/clone="403-1"
2016. .2121
/gene="VgA1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="16 A page 1847 c
                                                                              /organism="Aedes aegypti"
/db_xref="taxon:7159"
                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SQSYFKDIPFSGKQFQFCATATSEFPRYPYLKFSDFDKYYGDASQYFDFLYGESCQGG
AHIAVKGKQKQTGKYREYLRFSDVAKACKEQMANGYYQFEECQQAIDQAYYYDFYDYA
IEYKDVGSVAKHLTNKEYNYFQYAFYDFYFESNFFYHGKSNYIKAEFEFAPYGDYYNAS
FFGFSYAFQYQNYPVFNDYSTYFPYFFKYTFFPRYDFYYMHRLASHKPNKYFELSN
YEQFALIDRKFQYFSCSFSNDYFYTFONKKYFYDMGECWHAYMYTVKDDYDFYAQOSH
FYNSDFEYKYKNGFEEYEQFAALARRGSDNQLYFKFLFGDNYIEVFNNGGVPFVKYN
GRPYDLSKSNIAHFEYYEGYPSFPFFYAFAYPNKDLEVSFFGGKLKFATDGYKARFFF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YYNDKYSKYYKQYYYSKDSEYYQKFYGQKKDYYNDKEPFKETAPRIAKLLNIDAEEA
EQLEGGLIFKLENGYFETAFDNQT I ENLPHKMRHLFENLEGYAFDYTKFYQQDVVL
AWPLATGFPFIYTLKAFTYFKFEVDASAKTHPQYYKWPAGHPETENDDFYMPQSING
SVDVNLLYHRMVDAKVGFVTPFDHQRY I AGYQKKLHGY LPFINVELGLLDFYKDEYEFEF
KFLEPKDDHLLEHMSSWPYTGYKDITDMRPIAENPNAKIVHDDNQSTKTMEHTFGQDH
TGVALREHAKYDFDLINFQQFWSLIQKNDFVSAVNYPFAYQPYEYHQFNLFYDSQRTH
AKSFKFYAYQKEGAPSFEETGPKHPANRHSYSGNYYBSAYQPFVYSPGSQRRYEQFF
RNAAGGIRNSEVRYYDFGFEEYAPQYKSEFTFTAFABSPVDXTSRQLYYFYASPMFP
RNAAGGIRNSEVRYYDFGFEEYAPQYKSETTTTAFABSPVDXTSRQLYYFYASPMFP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DYSFYNNFVGLCGTNNGEYFDEFVTPDÖCYMRKPEFFAASYAITGONCTGPAKAFNYA
YQQKAKQECVKREVYYGDIIYNOEYYHPRYRYYNHNVEESSSSSSSSSSSSSSSSSSSSSSS
EFSSLSRSGSSSSSSEEQKEFHPHKQEHSMKECPVQHQHQFFEQGDRICFSLRPLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SCVYKAY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VCHSKCAATEKISKYFDVHCFEKDSTQAKKYKSEIGRGYTPDFKSFAPHKTYKFNYPK
                                                                                                                                       .8780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              residues"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 38; DB 3
Pred. No. 0.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches 100; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 3;
                                                                                                                                                                                                                                                                                                                                                                     Nematocera; Culicoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 6504;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ΛNΙ
                                                                                                                                                                                                                                                              Aedes aegypti and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6324
```

ORIGIN

```
BASE COUNT
ORIGIN
                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                   Matches
8560 AAATCCGAGATTGGCCGGCTACACTCCGGACTTCAAGAGCTTCGCCCCACACAAGACT 8619
                                                                                      8500
                                                                                                                                                                                                                                                                                                                exon
                                                                                                                                                                                                                                                                                polyA_signal
                                                                                                                    289
                                                                                                                                                                                                                                                                                                                                                                                 exon
                                                                                                                                                                                                                                                                                                                                                intron
                                                                                                                                                                                                                                                                                                                                                                                                                 intror
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sg.
                            CAGTCAGGCATCTGTGACAGGGGGACGGGAAAATGCCTGAAATTCCCCCTTCTTCCAATAT 408
                                                              ATCTGCAAAGACTGTCCCTACGGCACCTTCGGGATGGATTGCAGAGAGACCTGCAACTGC 348
                                                                                                                                                   98;
                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                2468
                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="VgA1"
8717. .8722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YYYDFYDYAIEYKDVGSYAKNI.TNKFYNYFQYAFYPYFESNFFYHGKSNYIKAEFEFA
PYGDYVNASFFGPSYAFQVQNYPYFNDYSTYFPYFFKYTFFRYQPYKMHRLPSHKPF
NRPYYYLLSNYEGFAIFDRKPQYPSCSFSNDNFYTFDNKKYFYDMGECHHAVMYTVKPD
YDFYAQQSHFYNSDFEYKKNGFEEYEGFAALARRGSDNQLYFKFLFGDNYIEVFPNN
GGVPFVKYNGRPYDISKSNIAHFEYKEGYPSFPFYAFAYPNNDLEVSFFGGKLKFAT
                                                                                                                                                                                                                                                                                                         /gene="VgA1"
7463. .>8722
                                                                                                                                                                                                                                                                                                                                                                                                                                          DSSSSSSSEFSSLGRSGSSSSSSSSSEQKEFHPHKQEHSMKECPVQHQHQFFEQGDR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DGYRARFFSDYSFYNNFVGLCGTNNGEYFDEFVTADQCYMRKPEFFAASYAITGQNCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LFYDSORTHAKSFKFFAYOKFGAPSFEETGPKHPANRHSYSGNYYESNYAOPFYYSPG
SORKYEOFFRAAASGIRNSFVRYYDFGFEYAPOYKSEFTFTTAFADSPVDKTSROLY
YFYASPMFPSOSYFKDLFFSGKOFOFGATATSEFPRVPYLKFSDFDKYYGDASOYFDF
LYGESCOGGAHIAVKGKOKOTGKCREYLRFSDVAKACKEOMANGYYOFEECOQAIDOA
                                                                                                                                                                                                                                                                                                                                             406.
                                                                                                                                                                                                                                                                                                                                                         'gene="VgA1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GANLMHSSKPTHPSKNEWNGHYKVMEPLVTGEGETHYDVNLIPAYMIQAHKQWVPQGQ
LRGEDDQFIQVTKTQNFDRCDQRMGYHFGFTGYSDFRPNTNQMGNVASKSLVSYMYLT
GNWYNFTIQSSSMINKVAIAPSLVNKEFALVYXQVNMTLNDVHFYDKVPMGPAEDLKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GYKGYGYDAGYKYNNOGYSYKNGFEYGYONAYQAAFYKHRPNYTEFEFSSWMPNYEYV
YNVTSKTMTALAELDDOWTGVTTRAYLVIRPKSRDYVVAYVKQPEYAVFNERLPHGYA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TKFYHDMFKFQPMPMSSKPFGTRYHKGAIKGLYVEKTIPNNEVNILKAWISQLQVDTH
                                                                                                                                                                                                                                         2274 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="vitellogenin"
/db_xref="PID:9790835"
/translation="MLAKLLLALAGLTAAYQYENSFKGYNPGYKGYDAGYKGYGYDA
                                                                                                                                                          6.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  јотп(2091. .2121,2192. .7405,7463. .8664)
/gene="VgA1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              υυπ(2016. .2121,2192. .7405,7463.
/gene="VgA1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene-"VgA1"
                                                                                                                                    Score 38; DB 3; L
Pred. No. 0.5;
0; Mismatches 100;
                                                                                                                                                                                                                                      1733 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2121,2192. .7405,7463.
                                                                                                                                                                  Length 8780;
                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .>8722)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .>8722
                                                                                                                                  0
                                                                                                                             Gaps
                                                                                                                              0
```

뭕 Ş 밁

sequence MAY NOT be

the entire insert of the

most

```
REFERENCE
AUTHORS
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
SC2E1/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8620 TACAAGTTCAACTACCCGAAGAGCTGTGTCTACAAGGCATACTAGGAAACGACATTTGCA 8679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     469 GATGGCAATATTGTGAGA 400
orrect initiation codon. Where possible we choose an initiatic codon (atg, gtg, ttg or (att)) which is preceded by an upstream ribosome binding site sequence (optimally 5-13bp before the initiation codon). If this cannot be identified we choose the
                                                                                                                                                                                                                                                                            The more significant matches with motifs in the PROSITE database are also included but some of these may be fortuitous. The length codons is given for each CDS.

Usually the highest scoring match found by fasta -o is given for CDS which show significant similarity to other CDS in the database. Where these have been used to deduce the initiation codon. Genewhere these have been used to deduce the initiation codon. Genewhere the sequences are given the sequences are given where these have been used to deduce the initiation codon. Genewhere the sequences are given the sequences are given where the sequences are given the sequences.
                                                                                         http://www.nih.go.jp/
jun/cgi-bin/frameplot.pl. CAUTION: We may not have
correct initiation codon. Where possible we choose
                                                                                                                                                              prediction is based on positional base preference in codons using a specially developed Hidden Markov Model (Krogh et al., Nucleic Acids Research, 22(22):4768-4778(1994)) and the FramePlot program of Bibb et al., Gene 30:157-66(1984) as implemented at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Details of S. GUELLUCCE. Web. available on the World Wide Web. (URL; http://www.sanger.ac.uk/Projects/S_coelicolor/) CDS are numbered using the following system eg SC7B7.01c. SC (S. 7R7 (cosmid name), .01 (first CDS), c (complementary)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
Submitted (03-JUN-1998) Streptomyces coelicolor sequencing project, Sanger Centre, Wellcome Trust Genome Campus, Hinxton, Cambridge CB10 1SA E-mail: barrell@esanger.ac.uk Cosmids supplied by Prof. David A. Hopwood, [3] John Innes Centre, Norwich Research Park, Colney, Norwich, Norfolk NR4 7UH, UK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATCCCATTTTTGTATGA 8697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 by the BBSRC.
Details of S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAGTAACCAAGTCTTCCAACAGATTTGTTTCTCTCACGGAGCATGACATGGCATCTGGA 468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Streptomyces coelicolor sequencing at The Sanger Centre is funded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eubacteria; Firmicutes; Actinomycetes; Streptomycetes; Streptomycetaceae; Streptomyces.

1 (bases 1 to 38962)
Redenbach, M., Kisser, H.M., Denapaite, D., Eichner, A., Cullum, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g3191976
30S ribosomal protein S16; 30S ribosomal protein S2; 50S ribosom protein L19; cell division protein FtsH homolog; elongation fact; ffh; ftsH; glnB; glnD; nitrogen regulatory protein pII; prophage; protein pII uridylyltransferase; pyrH; RNA polymerase recognition particle protein; sipB; rpsP; signal peptidase I; signal guanine-N1)-methyltransferase; tsf; uridylate kinase; whig.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Parkhill,J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Murphy, L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A set of ordered cosmids and a detailed genetic and physical map
for the 8 Mb Streptomyces coelicolor A3(2) chromosome
Mol. Microbiol. 21 (1), 77-96 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Streptomyces coelicolor. Streptomyces coelicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Streptomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 38962)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 38962)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and Harris, D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Barrell, B.G. and Rajandream, M.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          38962 bp DNA coelicolor cosmid 2E1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30S ribosomal protein S2; 50S ribosomal protein FtsH homolog; elongation factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BCT
                                                                                            predicted the an initiation
```

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RBS
                                                                                                                                                                                                                                                                                                                                                 SdC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cepeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sequenced clone. It may be shorter because we only sequence overlapping sections once, or longer, because we arrange for a small overlap between neighbouring submissions. Cosmid 2E1 lies between 7A1 and 6A9 on the AseI-B genomic restriction fragment.
                                                         /notee SC2E1.03, ffh, signal recognition particle protein, len: 550 aa; highly similar to mnay e.g. SR54_ECOLI (453 aa), fatsa scores; opt: 1465 z-score: 1282.8 E(): 0, 50.0% identity in 458 aa overlap. Contains PS00017
ATP/GTP-binding site motif A (P-loop), PS000300 SRP54-type proteins GTP-binding domain signature and Pfam match to entry SRP54 PF00448, SRP54-type proteins, score 66.57: Similarities suggest possible start site at aa 35".
                                                                                                                                                                                                                                                                                                                                                                                                                                                       2719. .2723
/gene="glnD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="7
2719. .2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="SC2E1.02, probable glnD, protein pII uridyly/transferase, len: 835 aa; similar to many e.g. GLND_ECOLI (890 aa), fasta scores; opt: 403 z-score: 540.4 E(): 7.3e-23, 26.2% identity in 851 aa overlap. Contains 7 degenerate repeats of the sequence PSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AEARRRLLDVRDALHLATGRATDRLALQEQDQVAAELGLLDADALLRQVYEAARVISY
AGDVTWREVGRVLRSRSVRPRLRAMMIGRINGGKPVAERSPLAEGVVEQDGEAVLARTA
RPERDPALPLRAAAAAQAGLDSRHAVRTLAATAFDLFTWPAERAEGLVTLLGSGR
PTVQVWEALEAEGLVTIRLLPDWERVRCRPQRINAVHLWTVDRHLIETAVRAAGFTRYNH
RPDLLLIAALLHDIGKGWPGDHSVAGETIARDVAARIGFDGADTAVLATLVRHHLLIV
ETATRRDLDDPATVRAVAQAVGTEHTLELLHALTEADALATGPAAWSSWRGSLVADLV
KRVSGYLAGERQPEAESAAPTAEQERLAVEAFRTGGFVLALRAQTEPPADSAPAPSSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SSPSFPSPLSSPSSADGPEPLGVELLIAVPDQAGVLPAVAGVLAMHRLTVRTAEL
RSVPLPDGVEGSVLLLDMRVAAQYGSLPQAARLRADLVRALDGTLDIAARLAERDAAH
PRRRGVEPPPPRVTVAPAASRLATVIEVRAQDAPGLLFRLGRALEAAGVRVRSAHVST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GLFGAATEEHTGISLVAVGGYGRGELSPRSDLDLLLLHDGRDDKAVAALADRLWYPVW
DLGIDLDHSVRTPQQARKTAGQDLKVHLGLLDARHLAGDLGLTASLRTAVLADWRNQA
PKRLPELRDLCAERAERQGELQFLLEPDLKEARGGLRDATALRAVAASWLADAPREGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="SC2E1.01, glnB, nitrogen regulatory protein pII, partial CDS, len: >54 aa; highly similar to many e.g. GLNB_AZOBR (112 aa), fasta scores; opt: 198 z-score: 38: E(): 4.9e-14, 50.0% identity in 54 aa overlap"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="putative protein pII uridylyltransferase"
/db_xref="PID:e1296622"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="glnD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RTGERGPDAL"
                                                                                                                                                                                                                                                                              note="SC2E1.03,
                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="possible RBS upstream of ffh"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JGANAVDAFYVTRGEGTPLPGDEAASVARGLEESLRT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="PID:g3191978"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene='
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="PID:g3191977"
/translation="IRIEVLVEDDDAEQLIDVVVKAARTGKIGDGKVWAVPVDTAVRV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="glnB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Streptomyces
/strain="A3(2)"
/db_xref="taxon:1902"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       translation="MTDEAEDSGPGGYAAARLRLLTEGARSGPPRRRALAELTDGWLA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="glnB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone="cosmid 2E1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             db_xref="PID:e129662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'codon_start='
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "glnD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         degenerate 9bp repeats"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'nitrogen regulatory protein pII"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         381.9
gene
                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 stem_loop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
```

```
/note="SC2E1.04, ftsH, cell division protein FtsH homolog (Zinc metalloprotease, integral membrane protein), len: 648 aa; similar to many e.g. FTSH_LACLA (695 aa), fasta scores; opt: 1489 z-score: 1195.5 E(): 0, 41.7% identity in 640 aa overlap. Contains PS00017 Arp/GTP-binding site motif A (P-loop), PS00674 AAA-protein family signature and Pfam matches to entry AAA PF000004, AFPasses associated with various cellular activities (AAA) and to entry zn-protease PF00099, Zinc-binding metalloprotease domain, score 22.07, score 357.96. Proline-rich N-terminus is not present in other ftsH homologs"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product="signal recognition particle protein"
/db_xref="piD:e1996623"
/db_xref="piD:e1996623"
/db_xref="piD:e1996623"
/db_xref="piD:e1996623"
/db_xref="piD:e3191979"
/db_xref="piD:e3191979"
/translation="MTVRSVQRAGTLCLPGRIPWRTTHTNADARTYAAVFDTLSDRLS
ATFKSLRGKCRLTEADIDATAREIRIALLEADVALPVRAFIKKVKERSLGAEVSKAL
NPAQOVLKIVNEELVGILGGETRRLFRAKQPTVINLAGLGGAGKTTLAGKLGHWLKE
QGHSPLLVACDLQRPNAVNQLSVVAERAGVAVVAPEPGNVGDDYWVAKDSIEFAKAK
VHDLVIVACDLQRPNAVNQLSVVAERAGVAVVAPEPGNVGDDYKVAKNSIEFAKAK
VHDLVIVDTAGRLGIDQELMQQAADIRDAVSPDEILFVVDAMIGQDAVNTAEAFRDGV
GFDGVVLSKLDGDARGGAALSIASVTGKPIMFASNGEKLDDFDAFHPDRMASRILDMG
DLIFLIEQAEKTFSQEEAEKMASKLAGKKGODETLDDFLAQMEOGYRMGSISKLLGML
PGMGQMKDQINNLDERDVDRTAAIIKSMTPGEROEPTINGSRRARIAKGSGVEVSAV
KNLVERFFEARKMASRAAGGGGMPGKPGMGGGFGROKKQKKAKGKQRSGNPMKR
KODEOFFEABENAAAGGGGMPGKPGMGGGFGROKKQKKAKGKQRSGNPMKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EGDGTYTKFTTERPTFADDQLWADLTKNRVTVTAEPVVQHRSFLANLLIALAPMLILV
VLWIF IARRWRGALGGGAGGMLGRKAPPKFVELEAGKPRTTFADVAG IDEVEGELSDV
VDFLKNPDAYRRWGAKNPRGVLLTGPPGTGKTLLARAVAGEAGVPFFSASASEFIEMI
VGVGASRVRELFAEAKKVAPSIIF IDEIDTIGRARGGSGTGGHDEREQTLNQILTEM
DGFSGSEGVIVIAATWRADILDAALTRPGRFDRVVSVSPEDRGGREAILEHFREIFL
APDIDLAQVARTTPGMTGAELANLANEAALLAVKRKQERVTQANLSEALEKVQLGAER
PLVMPEEERRRTAYHESGHALLGMLQPGADDVRKITIVPRGRALGVTLSTPDADKYAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="cell division protein FtsH homolog"
/db_xref="ptD:e1196624"
/db_xref="ptD:e3191980"
/translation="MTNPSPPRKAPEPPWRTEGTPDEPPKPPPGGRRMRGGWWNLILA
/translation="MTNPSPPRKAPEPPWRTEGTPDEPKPPPGGRRMRGGWWNLILA
ALIVELIANIFISFFREGDEPTISYTEFSKQVDEGNVSKIYAKGDAIQGQLKKARDNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="Pfam match to entry AAA PF00004, ATPases associated
with various cellular activities (AAA), score 357.96"
/note="Pfam match to entry zn-protease PF00099, Zinc-binding metalloprotease domain, score 22.07" complement(6468. .7085)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ETLDEADAYRIAGITRLTKDDPEA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TEEYLRGRIIGALGGMAAEHVVYGMITTGSESDLEQVTNIARGMVARWGMSERVGRLS
ALPGDAQQAYGLAAAPQTLDAIDGEMRRVVDSCYEEAVRKLRDHRGQLDALAESLLAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Pfam match to entry SRP54 PF00448, SRP54-type
proteins, score 66.57"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="PS00017 ATP/GTP-binding site motif A (P-loop)" 3566...3697
                                                                                                                                                                                                                                                                             5530. .5586
/gene="ftsH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="hairpin loop with 22/23 bp stem"
4504. .6450
/gene="ftsH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        signature'
                                                                                                                                                                                                                                  note="PS00674 AAA-protein family signature"
                                                                                                                                                                                                                                                                                                                                                                                                                      /gene-"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KQQEQEEAARRAAAAQSGGALGLPQQGGQDFELPDEFKKFMG"
                                                                                                                                                                                                                                                                                                                                                                      note="PS00017 ATP/GTP-binding site motif A (P-loop)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note="PS00300 SRP54-type proteins GTP-binding domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ′gene≖"t
```

		misc feature						•	CDS	Action	7000	RBS							CDS	gene									CDG	CDS	gene	RBS .		misc_reature									CDS	
/note="PSU0/32 Ribosomal protein S16 signature"	/gene="rpsp" /note="psp"	NPSVMEVDAERVAYMLGVGAQPTEPVLAILKKTGDWQKFKGEPAPAPLLQPAEKAARP SFEAIGGEDEGKGEAITQKKKADKKDEAAAESSASEA" 9651 9690	/db_xref="PID:g3191984" /translation="MAVKIKLKRLGKIRSPHYRIVVADSRTRRDGRAIEEIGKYHPTY	<pre>/product="30S ribosomal protein S16" /db_xref="pID:e1296628"</pre>		2 Ribosomal p	ny e.g. RS16_MYCTU (1654 Process of the process of	psp" C2El.O8, rpsp, 30s ribosomal protein sis	964510064	UU64	/note="possible RBS upstream of rpsp"	DCGRNVRVVPSVLAQAPIMCGGCGKPFRIPEVVGAGMS" 96299633	HELSFERLLHEAVHGIAAARGVRDTSRAGRYHNRRFLAIABELGLDHPEEPHPSSGFS LVTLTPEAKRRYRPTIERLORALKAHTVATATDTARSFRGDAABHGSSGGGVDVXAV	/translation="MSTTPPVLAAELAQAWADIQRHHTELPDLAAPESLIGESSSACG		/transi_table=11 /product="hypothetical protein scorn or"	**************************************	inknown len: 109	87939389	(gene="score: 07"	PDGTVWMPNVFRYLIARVR"	ATPLAARGAAVVLAGWGPPERCATTSVLRVAAKLTDPTHGTGGWRPALRDDLEEVAQR	GADSTYSTRTRGDAPRIVQGTPGDAADPTAPAFTLYTAFEPGGCRAGDSETLGDLLAR	/translation="MTPTLVRQHSSHAQATPHVDPRARARDWSEIQERMLVPLYEAVY	/db_xref="PID:e1296626" /db_xref="PID:q3191982"	/product="hypothetical protein SC2E1.06c"	/transl_table=11	/note="SC2E1.06c, unknown, len: 295 aa"	/gene="SC2E1.06c"	/gene="SC2E1.06c"	/NOTE="possible RBS upstream of Sc2E1.05c" complement(72368123)	complement(70927096)	/note="PS00013 Prokaryotic membrane lipoprotein lipid	complement(70147046) /gene="SC2E1.05c"	DAESWKQGESHVFCETYVIPAGATSVEVHWSEEDGEPYVWKFPQK"	TQASPSPQPASGGMAQGESASGKVAEGPGEVTYDVLAQKVEVGTEAEAAKAVADAA	/db_xref="PID:g3191981"	/product="putative lipoprotein" /db_xref="PID:e1296625"	/transl_table=11		l signal sequence and appropria Prokaryotic membrane lipoprote	/note="SC2E1.05c" probable lipoprotein, len: 205 aa;	Complement (6468 7085)	/G010="G070F1 O50"
		CDS	gene	RBS											CDS	gene		RBS												CDS	gene	RBS								CUS	300	Q DO D	RBS	
C: 571 2	v similar to many a g Brio wychn 119,	/gene="Tpls" 1195412304 /gene="Tpls"	/note="possible RBS upstream of rpls"	1193911942	RDEALRRTTANRPDLIERCDPAAFDKKDREMLSILGWQPDPDGEPTGREWRRTPGME	VHLSERPWLIFTPARYEGIDRRVVDEYATRMPVYEVSIGDYVLAGGEAAVLVVTEAVA	<pre>/translation="mrldvvTifpEyLepLnvSlvgKarargQlGvHvHdlrDwTyDr HNTvDDTPYGGGPGMvMKTEPWGDALDSvLaDgyETGCGFpalvvpTpSgapeTGFra</pre>	/db_xref="PID:g3191987"	/product="tRNA (guanine-N1)-methyltransferase"	/transl_table=11	aa overlap"	≁ ც	/noce="SC2E1.11, trmD, probable tRNA (guanine-N1)-methyltransferase, len: 277 aa; similar to	/gene="trmD"	/gene="trmD" 10984. 11817	10984. 11817		DEFECTIONALIASAKDAGAEDAGDEA" 1097610979	DLDVTEDGTEVGRITEISHLPTQDLFVVERPDGSEVYVPFVSEIVTGIDLDAQRAVI	/crausiacion="MQLVVARIGRAHGIKGEVTVEVRTDEPELRLGPGAVLATDPAST GPLTIESGRVHSGRLLLRFAGVHDRTGAFALRNTLLTADVDDDFDBEDFDFDFVDVOTT	/db_xref="piD:g3191986"	/product="hypothetical protein SC2E1.10" /db_xref="PID:e1296630"	/transl_table=11	0.018, 27.6% identity in 170 aa overlap"	rimM (178 aa), fasta scores; opt: 210 z-score: 174.2 E():	693.1 E(): 2.3e-31, 48.3% identity in 176 as overlap. Also	MTCY274.38c (176 aa), fasta scores; opt: 479 z-score:	/note="SC2E1.10, unknown, len: 188 aa; similar to	/gene="SC2E1.10"	/gene="SC2E1.10" 10418 10984	10418. 10984	1040310407	/translation="MLEEALEHLVKGIVDNPDDVQVASRNLRRGRVLEVRVHPDDLGK VIGRNGRTARALRTVVGAIGGRGVRVDLVDVDHVP"	/db_xref="pID:93191985" /db_xref="pID:93191985"	/product="hypothetical protein SC2E1.09"	/codon_start-1 /trans1 table=11	z-score:628.4 E(): 9.1e-28, 71.6% identity in 74 aa overlap"	YX40_MYCTU MTCY274.40c (80 aa), fasta scores; opt: 356	/note-"SC2E1.09, unknown, len: 79 aa; highly similar to	1006710306 /gene="SC2E1.09"	/gene="SC2E1.09"		1005610059	

```
Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                stem_loop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                               //ortes SC2EL.14, sip2, probable signal peptidase I, len:
//ortes SC2EL.14, sip2, probable signal peptidase I,
446 aa; similar to many e.g. LEP_HARIN signal peptidase I
(EC 3.4.21.89) (349 aa), fasta scores; opt: 151, z-score:
317.3 E(): 1.9e-10, 30.1% identity in 286 aa overlap.
Contains PS00761 Signal peptidases I signature 3, Pfam
match to entry signal peptidases I signal peptidases I,
score 42.41 and probable transmembrane domain. Also
similar to surrounding genes sip1 (E(): 9.7e-24, 44.9%
identity in 274 aa overlap), sip3 (E(): 1.8e-28, 56.3%
identity in 245 aa overlap), and sip4 (E(): 1.1e-09, 35.9%
identity in 233 aa overlap). Note that after aa 325 the
ORF overlaps the downstream sip3 gene SC2E1.15, and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      //note="P501015 Ribosomal protein L19 signature"
12350. 13129
/gene="sipl"
12350. 13129
/gene="Sipl"
12350. 13129
/gene="SC2E1.13, sipl, probable signal peptidase I, len:
/note="SC2E1.13, sipl, probable signal peptidase I
/note="SC2E1.13, sipl, probable signal peptidase I
(EC 3.4.21.89) (349 aa), fasta scores; opt: 162 z-score:
381.2 E(): 5.3e-14, 32.5% identity in 243 aa overlap,
though with large internal deletions. Contains ps00761
Signal peptidases I signature 3, Pfam match to entry
signal_peptidases I signature 3, Pfam match to entry
signal_peptidases I signal peptidases I, score 51.12
and probable transmembrane domain. Also similar to
downstream genes sip2 (E(): 9.7e-26, 44.9% identity in 274
aa overlap) sip3 (E(): 4.8e-16, 35.6% identity in 274
ao overlap) sip3 (E(): 8.7e-08, 37.0% identity in 219 aa
overlap).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13122. .14462
/gene="sip2"
13122. .14462
/gene="sip2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="sip1"
/gene="sip1"
/note="Pfam match to entry signal_pept_I PF00461, Signal peptidases I, score 51.12"
/gene="sip1"
/product="putative signal peptidase
/db_xref="PID:e1296634"
/db_xref="PID:93191990"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="putative signal peptidase I"
/db_xref="pID:e1296633"
/db_xref="pID:e3191989"
/db_xref="pID:g3191989"
/translation="MDTETQHTERDRSSRPSDSEQPSEPEGPEERSRSAFTGRIGDWL
PGGRITVTLLILLLFLLLVSTFVLQPFQIPSGSMERGLRIGDRVLVNKLAYREDGRPR
RGDIVVFDGTGSFGHGDYIKKVVGVGGDHYVCCDEEGRVRVNGQPVDESAFLYPGDRP
                                                                                                                                                                                 positional base preference suggests that translation the other frame. No error in the cosmid sequence can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STVPFDVVVPDGTLFVLGDHRSDSSDSRDHLGSPGGGMVPLDDVIGRADWIVWPFGHA
TRLDRPDAYARVPDAEAGAGAASGAGAAPDPGAAPDGDADG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="508 ribosomal protein L19"
/db_xref="piD:e1296632"
/db_xref="piD:93191988"
/db_xref="PiD:93191988"
/translation="MSHLLDSVDAASLRSDVPAFRPGDTVNVHVRVIEGNRSRVQQFK
GVVIRROGAGVRETFTVRKVSFSVGVERTFPVHTPIVEKIELVTRGDVRRAKLYYLRE
                                                                                                                                                          found to account for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="hairpin loop with 34/41 bp stem"
12509. .12799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="PS00761 Signal peptidases I signature
l3122. .14462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       identity in110 aa overlap. Contains PS01015 Ribosomal
protein L19 signature"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    transl_table=11/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LRGKAAKIKEKRDS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene-"rpls"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
                                                                                                                                                                                     is in
be
                                                                                                                      Sdo
                                                                                                                                                                              gene
                                                                                                                                                                                                                                             RBS
                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
```

```
VKRRRRGAVELIELINGVAVULALVIKETINGSRRTAAPSGGRSRAERRKLORK
VKRRRRGAVELIELINGVAVULALVIKETINGVAVUVGESLAEDTIKIGSRVAUVALI
PRISSADSGGGVVPROPGGANGASDGTIKIDSPVYQASCALEDILESDDEKULI
RKVKVGGDHVKCCDKGGKVVNACVPLTEDILYKGDRESETSPERVTVESCHAMVAGH
RSSAANSKAHGDITGTVYSQDEVGRAAVIAPSGGTRTLERKYKSVASGAAGGGRRTV
RSSRRKAFDFDFNAMMELPPAGLIVYGDRESETSPERVTVESCHAMVAGH
RSSRAASSAHGDITGTVYSQDEVGRAAVIAPSGGTRTLERKYKSVSDAAGGGRRTV
RSSRRCAFTRASTVSGGGRFTLERKRRGARFADQDVPGAGVLDPVLLDGEHPSDR*
1336.1318

MELSERVAPDPNAMMELPPAGLIVYGJGHALPEPLI PF00461, Signal
POSTAGESTIRGSVRSGGRFTLERKRRGARFADQDVPGAGVLDPVLLDGEHPSDR*
1336.211313

MIGHT 13513

MIGHT
```

/note="SC2E1.16, sip4, probable signal peptidase 258 da; similar to many e.g. LEPS_BACSU signal pe (EC 3.4.21.89) (184 da), fasta scores; opt: 258 z

```
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                /gene="SC2E1.19"
/note="SC2E1.19, unknown, len: 130 aa; simila
/note="SC2E1.19, unknown, len: 130 aa; simila
/note="SC2E1.19, unknown, len: 130 aa; simila
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="SC2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/note="Sc2E1.19"
/not
                                                                                                                                                                                                                                                                                                                                                                                                             emqvhsvqgevffevsmadawvwdmyrparfvkqvrvltfkdvnieelnksdlelpgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene-"SC2E1.18" unknown, len: 102 aa; highly similar to /note-"SC2E1.18, unknown, len: 102 aa; highly similar to M. tuberculosis hypothetical protein YX32_MYCTU MTCY274.32c (101 aa), fasta scores; opt: 515 z-score: 1085.2 E(): 0, 75.0% identity in 100 aa overlap"
                                                                                                                                                                                                                                                                                            /gene="SC2E1.19"
16930. .17322
                                                                                                                                                                                                                                                                                                                                                                        16930.
                                                            codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="PID:93191994"
/translation="MSAEDLEKYETEMELKLYREYRDVVGLFKYVIETERRFYLTNDY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product="hypothetical protein SC2E1.18"
/db_xref="PID:e1296638"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein, score 37.78" 16132. 16101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="MTPAGQDTYEGGLRRVARVVLLDPEDRILLLHGHEPDDPADDWWFTPGGGVEGDETRAEAARRELLEETGTTDVELGPVLWRRRCSFPFAGRRWDQDEWYYLARTARTATEAVGPGLTELERRSVAGARWWTCEELTRARETVYPTRLAELLTTLLDEGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15988. 16506

/gene="SC2E1.17"

/note="SC2E1.17, unknown, len: 172 aa; similar to C-terminus of M. tuberculosis hypothetical protein TR:006205 (EMBL:295387) MTCYIA10.24 (351 aa), fasta scores; opt: 345 z-score: 375.2 E(): 1.2e-13, 44.7% identity in 161 aa overlap. Contains PS00893 mutT domain mutT protein, score 37.78"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="SC2E1.18"
16563. .16871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="PS00893 mutT domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="SC2E1.17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Pfam match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16069.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PAGPVTLDTEIV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="hypothetical protein SC2E1.17"
/db_xref="PID:e1296637"
/db_xref="PID:93191993"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="sip4"
/note="Pfam match to entry signal_pept_I PF00461, Signal
peptidases I, score 49.57"
15988. .16506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'gene="SC2E1.17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VVVLVIAGAVLILGGAAYGPLAKRAAASRARKGAEPAGGR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /translation="MGGESTTRTVPRGGGANKGPVGSRTGQRLSGIAVALGLVLFLGGFAWGAVVYRPTTVPTSSMTPTIDAGDRVLAQRIDGADVRRGDVVVFKDATWANAPMVKRVAVGGDTVSCCQQGKLKVNGKVIDEPYLPAGTPAEISDFQTVTVPEGRLFLLGDERRUSVDSTAHLTDAAAGTVSRGAVDARVDAVAWPMDGMLERPTGFRTLGDLSSPGPLRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          337.6 E(): 1.4e-11, 32.2% identity in 177 as overlap. Contains Pfam match to entry signal_pept_I PF(0461, Signal peptidases I, score 49.57 and probable transmembrane domain. Also similar to upstream genes sip1 (E(): 8.8e-10, 35.5% identity in 219 as overlap), sip2 (E(): 3.8e-13, 35.9% identity in 223 as overlap) and sip3 (E(): 8.1e-15, 35.4% identity in 237 as overlap).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="putative signal peptidase I"
/db_xref="PID:e1296636"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="PID:g3191992"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /transl_table=11
                                                                                                                                                                                                                                                                                        17322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  signature"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mutT PF00293, Bacterial mutT
                                                                                                                                                                                    similar to
                                                                                                        CTU MTCY274
_276.8 E():
                                                                                                                                                7274.29c
                                                                                                                            gene
                                                    SdC
                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene-"SC2E1.21"
/gene-"SC2E1.21"
/gene-"SC2E1.21, unknown, len: 382 aa; N-terminus is Gly-rich, C-terminus is similar to the N-terminus of several hypothetical proteins e.g. SM-ECOLI SMF protein (374 aa), fasta scores; opt: 402 z-score: 277.5 E(): 3.2e-08, 40.7% identity in 194 aa overlap. This ORF around aa 360, and to continue as the last part of SC2E1.37. The similarity to the M. tuberculosis hypothetical protein YX27_MYCTU MTCY274.37 C (389 aa) (fasta scores; opt: 603 z-score: 511.5 E(): 3e-21, 46.8% restarts in SC2E1.37. Alternative start site at aa 118 forchm start=1
                                                                                                                                                                                                                                                                                                                                                                            /db_xref="piD:g3191997"
/db_xref="piD:g3191997"
/tanslation="MSGNTRPPEGAAPSGDTGPGTSGTLFPEAAVSFGGGSPAEGGAM
TPFGAGDGPDGGEARWAGPGFGDGDGAAVTGAGVAARGRGAAGTCGTGGGGAGSGARG
GPEDRELLGRVFLARVFEEGDEAGGRWVRERGAPEVVRRLREGGRALPGVSEKRWAGL
CARAGRADPGRDLAVARSAGARFVVPGTAEWFGQLDDLGDAFPLGLWYRGGPSLRWMA
LRSVAVVGARACTEYGAHMAATLAAGLAERGWVVSGGAYGIDGAAHRGALGAGGATA
AVLACGUDRPYPPGHTALITRIAEDGLVVGELPPGDHPTPSRFILRNRVIAALTRGTV
                                                                                                                                                            /note-"probable prophage: has low GC (approx 66-68%), some ORF's with similarities to bacteriophage ORF's. I ORF SC2E1.21 appears to have been interrupted by this prophage and apparently continues as the last part of
                                            /gene-"SC2E1.22"
20271. .20582
                                                                                                                                                                                                                                                                                                                                                            VVEAAHRSGSLVTARAARRLGRHVMGVPTPLSGGAALAPIRERLATAT
20271. .20582
'gene="SC2E1.22"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /transl_table=11
/product="hypothetical protein SC2E1.21"
/db_xref="PID:e129664]"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref-"PID: 93191996"

/translation="MGFARTCSVALVGVEGVVVEVQADLEPGVAAFTLVGLEDKSLTE
SRDRVRAAVVNSGAQWPQKKLTVGLSPASVPKSGSGFDLAVAASVLGAAERIDPRVLA
DIVMIGELGLOGRVRPVRG ILPAVLAAAEAGYEQVVVPECAAPEASLVPGVSSVLGVRS
LRQLIAVLADEPVPEEEEQDLQGREDPLMAGLEMPGTVAATGMHGMGAAQHDHGHDLAD
VVGQESARTAVEVAAAGRHHLFLEGPPGAGKTMLAERLPAILPRLCRAESLEVTAVIS
VAGLLPPGKPLIDVAPYCAPHISATMQALVGGGFGIARPGAVSAHRGVLFLDETPEF
SHALDALRQPLEAGHYVIAASAGVYRFPARFIAVLAANPCPGRFSRTDELCECPSS
SHALDALRQPLEAGHYVIAASAGVYRFPARFIAVLAANPCPGGFFGTDELCECPSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="SC2E1
18944. .2009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AIRKYQARLSGPLLDRVDLRVEVERVTRSQLAGDGPRGDSTRAVADRVRAARDRAAAR
LAGTPPRSNSTVEGRELRTKWEAAAGALDEAERSLERGVLTARGLDRVLKVAWTVADL
VGHDRPDARDVALALQLRTGVPRGVPMALGALA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18944.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="SC2E1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541aa; similar to hypothetical proteins from many organisms e.g. YIFB_ECOLI (516 aa), fasta scores; opt: 356 z-score: 935.9 E(): 0, 37.0% identity in 513 aa overlap. Contains PS00017 ATP/GTP-binding site motif A (P-loop)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17322. .18947
/gene="SC2E1.20" unknown ATP/GTP binding protein, len:
/note="SC2E1.20, unknown ATP/GTP binding protein, len:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /Translation="MIVGAGGGADMNARGAMGRYGETLAARRETGAGMTVLERNWRCG
RTGELDIVARDGDVLVVCEVKTRRGGAFEHPMAAVTPDKAERLRRLAERWIQTHGGAP
PGGVRIDLYCYLLPQRGAPVVEHARGVA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         product="hypothetical
db_xref="PID:e1296640"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="SC2E1.20"
17322. .18947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="hypothetical protein SC2E1.19"
/db_xref="PID:e1296639"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="PID:g3191995"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
                                                                                                                    . 20582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .20"
17 ATP/GTP-binding site motif A (P-loop)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein SC2E1.20"
```

CDS gene

Sdo gene

CDS

```
gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                           CDS
                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                   complement(21969.
/gene="SC2E1.26c"
/note="SC2E1.26c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="SC2E1.24"
/note="SC2E1.24, possible prophage transcriptional
/note="SC2E1.24, possible prophage transcriptional
regulator, len:64 aa; similar to the N-terminus of several
regulatory proteins e.g. Streptomyces phaeochromogenes
plasmid pJV1 TR:054677 (EMBL:U23762) traR (245 aa), fasta
scores; opt:137 z-score: 268.5 E(): 1e-07, 39.35 aidentity
in 61 aa overlap. Contains Pfam match to entry gntR
pr00392, Bacterial regulatory proteins, gntR family, score
                                                                                                                                                                         complement(21969.
/gene="SC2E1.26c"
                                                                                                                                                                                                                                              /translation="MATTDGDEPPEEREFLIGDTPFVRVREALERLAALNEGPRVEQR
VDRVDGIQNVFIGGGODTHGREVAERAATRLAEGROKEHEDFLALKQAEWTERLSV
WEMTGGGALVILAGAVLALVHAGNDLSYLELVTSLTGALITVGGGALALKSKRAMAN
TKAAEDNENKIDIDHKLEVATTFIDRVQDSQAKDRLNSAAALKALGMDAQPETMVNRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="possible RBS upstream of SC2E1.23" 20920. .21099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement(20579. .20869)
/gene="SC2E1.23c"
/note="SC2E1.23c, unknown prophage gene, len:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(20579.
/gene="SC2E1.23c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="PID:g3191998"
/translation="MTTQNSNHPCACGSYAFEVLIHENVGGDKVWQQKTTGCAATTQS
TFAPGHDAKLKSLLIAAGVGGHPVRQTTRDTVVVKDALKVAADLGWRDLVGEAIAKGS
                                                                                                                                                                                                                           LPDPQTKEIDPGEPT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RGTGEVRTELGLGTFVADAK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="putative transcriptional regulator"
/db_xref="PID:911290644"
/db_xref="PID:93192000"
/translation="MAEIISKRIADGTYPPGTRVPGIVELSAEFGIAASTAQKALAHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="SC2E1.24"
20920. .21114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              regulatory proteins, 20920. .21114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KIVGETGETEEVSAREWSVDQMPNLPLIDTRWPLCLCWKCNGNGTKGELRRR"
                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="SC2E1.25"
/note="SC2E1.25, unknown prophage gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="PID:g3191999"
/translation="MTTRYPALPQSYAITRDRDTVIPRYLVVTALRGGQMAGLSIRVY
/product="hypothetical protein SC2E1.26c"
/db_xref="PID:e1296646"
                                                                                                                                                                                                                                                                                                                                      /db_xref="PID:g3192001"
                                                                                                                                                                                                                                                                                                                                                        /product="hypothetical protein
/db_xref="PID:e1296645"
                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         note="possible RBS upstream"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="Pfam match to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product="hypothetical protein SC2E1.23c"
/db_xref="PID:e1296643"
                                         transl_table=11/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'gene="SC2E1.25"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               transl_table=11/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'product="hypothetical protein SC2E1.22"
'db_xref="PID:e1296642"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note="SC2E1.22, unknown prophage gene, len: 103 aa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21910
                                                                                                            unknown
                                                                                                                                                                                                    .22166)
                                                                                                                                                        .22166)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .20869)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entry gntR PF00392, Bacterial gntR family, score 43.92"
                                                                                                          prophage gene, len: 65 aa; very
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of SC2E1.
                                                                                                                                                                                                                                                                                                                                                                             SC2E1.25"
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Len:
                                                                                                                                                                                                                                                                                                                                                                                                                                                233 aa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sgo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24008. .26278
/gene="SC2E1.29"
24008. .26278
/gene="SC2E1.29"
                                       FKSSNTRKLRGVALND"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23631.
                                                                                                                                                                                                                                                                                                                                                                                                                         /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                   'codon_start=]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="SC2E1.28"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'gene="SC2E1.28"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LRELPPPAEDEQEPPAAA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene-"SC2E1.27c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  note="SC2E1.28,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             start=
```

```
/note-"SC2E1.29, unknown prophage ATP binding protein, len: 756 aa; some similarity to TR:038030 (EMBL:X76288) Streptomyces Bacteriophage phi-C31 early region ORF 9 (519 aa), fasta scores; opt: 360 z-score: 374.4 E(): 1.3e-13, aa) fasta scores; opt: 360 z-score: 379.4 E(): 1.3e-13, 24.4% identity in 55 aa overlap, and to a putative prophage ORF from M. tuberculosis TR:006608 (EMBL:Z95586) MTC1336.22 (471 aa), fasta scores; opt: 655 z-score: 535.5 E(): 1.4e-22, 29.8% identity in 416 aa overlap. Contains 2x PS000017 ATP/GTP-binding site motif A (P-loop)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note-"possible RBS upstream complement(22505...22867)
/gene-"SC2E1.270"
                                                                             NEASYMLPIETEISDEDADPHKLLVGNGVVDLRTGELLPVDRKYLLTRGTTVEYDPNA
DCPMMNDFLGWAFQGDIEMIEXIQRNEGMCLIGNNAHGVAFFLYGPGRSGKTTLTRVL
SRLLGDYAFSADLSVY NESSSGHNEFLARLAGARLVVY SEETROGGRINEADGKKETGE
DTLTASYKNKSWFEFLPAFTPVMFGNAQPSIAFDSGVERRMKVIPMRAQISDGOKNPK
                                                                                                                                                                                                                                                                                                                                                                                                                                    /product "putative ATP binding protein"
/db_xref="PID:e11296649"
/db_xref="PID:e11296649"
/db_xref="PID:e3129005"
/tanslation="%SYTTSEARDLAATQSGLDVPEHDTDRAAYFARLGFGVFPMPTN
/txanslation="%SYTTSEARDLAATQSGLDVPEHDTDRAAYFARLGFGVFPMPTN
KKMPRAKGWPDLAMTTVEEVEEMWRSFTPSGWQNIALTLDGWTVVDVDPKNGGTASLE
KKMPRAKGWPDLAMTTVEEVEEMWRSFTPSGWQNIALTLDGWTVVDVDTKNGGTASLE
KKLTAEYELPVTRTHHTASGPDSLHFIYRADPDRPIKSGPLSSRYPGIDIKTGRGSLIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                regulator, len: 71 aa; similar to the N-terminus of many e.g. TR:037946 Salmonella typhimurium bacteriophage L repressor protein C2 (220 aa), fasta scores; opt: 127 z-score: 227.1 E():2e-05, 45.7% identity in 46 aa overlap. Contains probable helix-turn-helix motif at aa 21 to 42 (Score 1829, +5.42 SD)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="PID:g3192002"
/translation="MNLPLGVKVLIVVICTLISVIVAMVAGFLSHASGSSVGQAILYG
GGRFAGSLLLCLAVLSALGVL"
LVEQMMLNEGPALMÄWÄVEGARLTÄÄESFVPDPPQVÄQÄVKEYKRENDHIGDFIEECL
VFDEGATVASDVVWGRYSKWIEAGGVDFVKKADDRAGKSLLVRMLKTWSIENGTPIES
                                                                                                                                                                                                                                                           APGSVINGRRYEVVSAAEPAVAPSWLSEIRGDAQYPVVPSARSRTPSRASAGHSRAAT
LAELRALPDDDPGROMGWLTGVAGHLARNHTDHDSYLHELRAIDSESEVPHDKDREMK
TADSIWEREQAKERRKAAPDKRFKSILWHHEHTDLGKGRRLRDLHGEDMHAPGGWGL
TWDGRRWARGDGQARRFMHSVADAISEAIESMEEKQRSDDLMRWFGRSCSGPGISAAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="Mpartropdalroirrorgytoyklaasigyhntaishyenghr
RPDYETLATIADVLGARMDDFYTARAA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /translation="MSEIPAIRRRRASQFDHIDCGRADECPVHEPLLGHPTRKVPSQL
DGAMTLAILAVAGVVSIFLFALKGVLDQVPDVIDSASRARDAWQRFKRKANEPPSPTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="SC2E1.27c, unknown prophage gene,
contains hydrophobic region near centre"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product="putative transcriptional regulator"
/db_xref="PID:e1296648"
/db_xref="PID:g3192004"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="hypothetical protein SC2E1.27c"
/db_xref="PID:e1296647"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note-"possible RBS upstream of SC2E1.29"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'db_xref-"PID:g3192003"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                possible prophage transcriptional 
'1 aa; similar to the N-terminus o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            len:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120 aa;
```

· ÆS	gene		gene	RBS	gene CDS	misc_feature RBS gene CDS
/db_xref="PID:e1296653" /db_xref="PID:e3192009" /db_xref="PID:e3192009" /translation="MythAQQGIGRNEISRRTGISTASYSRIAAAHGIEFDGSQTEV ALKARIAELKARQAGIALGLYEDITSARGLLRWATTHRDFAFAAKAISDLTQSAQRMT PEITNEEELEEAKEGLRDLYFQMGLMREGFEAKYGVPLDSDEGRELWDKARQEDMENE OP" 2864428649 /gene="SCZE1.33" /note="possible RBS upstream of SCZE1.34"	/translation="MARPETERADAGWVAITRDEGGRVGVKDVRMFELTGEGVTALTK RADGLMVPDPHAVEIINTDPLHAAKLAWLHKLVGVAERCTTDEARADLRRIAEWLIDW EPGDPGLKLADAEA" 2818428672 /gene="SC2E1.33" /gene="SC2E1.33" /note="SC2E1.33" /contains probable helix-turn-helix motif at aa 11 to 32 /codon_start=1 /transl_table=11 /product="hypothetical protein SC2E1.33"	/gene="SC2E1.32" /note="SC2E1.32, unknown prophage gene, len: 116 aa" /codon_start=1 /transl_table=11 /product="hypothetical protein SC2E1.32" /db_xref="piD:e1296652"	/gene="SC2E1.31" /note="possible RBS upstream of SC2E1.32" 27766. 28116 /gene="SC2E1.32"	/gene="SC2E1.31" /gene="SC2E1.31" /note="SC2E1.31, possible prophage transcriptional regulator, len: 63 aa; similar to the N-tearminus of many e.g. TR:E264367 (EMBL:X87420) Salmonella typhimurium bacteriophage ES18 gene C2 (216 aa), fasta scores; opt: overlap. Contains probable helix-turn-helix motif at aa 17 /codon_start=1 /transl_table=11 /product="putative transcriptional regulator" /db_xref="PID:e1296651" /db_xref="PID:e1296651" /translation="MESGRKLKEARNKRGMSQAAVAARMGLSGLYVSYWENGRYAPNG 277542759)	/note="SC2E1.30, unknown prophage gene, len: 183 aa" /codon_start=1 /transl_table=11 /product="hypothetical protein SC2E1.30" /db_xref="PID:e1296650" /db_xref="PID:e1296650" /db_xref="PID:e3192006" /translation="MNDLDRRGGRIFGRVDGEVDWPSGVDSPYRLMKLRDPEKYEREV ARQVDAQRVIVEWAEWYGLKRAKMACCPRWLTHKVSRRCNSRCTAFGGGATDHRWLEH GVGWVLDGQPVALTSASYGISDEYRARFEWWVNEDPRLAVALGGQGWYGYGSTQVLVW 27578 . 27769 /gene="SC2E1.31"	/note="PS00017 ATP/GTP-binding site motif A (P-loop)" 2614726170 /gene="SC2E1.29" /note="PS000017 ATP/GTP-binding site motif A (P-loop)" 2655126554 /note="possible RBS upstream of SC2E1.30" 2656227113 /gene="SC2E1.30" 2656227113
		gene CDS		RBS 9ene CDS	RBS gene CDS	gene CDS
/LFAID1=1_TABD1==11 /product="hypothetical protein SC2E1.37" /db_xref="pID:e1296657" /db_xref="pID:93192013" /db_xref="pID:93192013" /translation="xfQRWTDALDVAMGVVERAVQPVRLRAVAYARVSTEEQAKGYGV QAALKKILRYIGKKUMDHYGTYTDEGISGSLEAADREDLKRLMADAHROPKPEDIVVV SEGRAIGRVGRAFWRWWALEDIGITVGVVEDDYLDNSTPEGRKKMRRDADYAETEWET IRKRTQGGLOEKAEDGGNPGGOPPGYEIACOGOKGKSHLVQCAAEVKTLRNAWAMYV EEKLNTREVAARLNALINFTRSGVPWSHSWLRAKLLSESTINARVIFRNPNRAHAGHG AKFGEDGKPLHGETWIIKLKPIEEPGEVAALQVTLAQTSKGAGRPKRFVPLSKRLEN EHTGCNSHHVGMARTSREGRWYRCTGLAAKYPGDPTCTCKMVDADAMESAVWGEVVSL	Very limited similarity to khodococus opacus TR:20335035 (EMBL:ARF003948) putative transposase homolog (2-20-235035) fasta scores; opt: 215 z-score: 280.3 E(): 2.2e-08, 33.3% identity in 105 as overlap. Contains ps00397 Site-specific recombinases active site and pfam match to entry 36.16. The last part of this ORF (as 672 onwards) appears to be a continuation of SC2E1.21, which was interrupted by (389 as) (fasta scores; opt: 246 z-score: 225.9 E(): 2.4e-05, 38.8% identity in 116 as overlap) continue after /codon_start=1.	ATTKOPHAPHDAKKKSALIRWGALGLEIRRNEGGVATSASDAKHAARYAFAHAVTAG VKRABAKAAEKAERAARAAKKAAPAPEVIKAKVGRVTYQGRMDGDHFVYEVKGQERR TLKFQPAA* 3082433214 /gene="SC2E1.37" 3082433214 /gene="SC2E1.37"	/product="hypothetical protein SC2E1.36" /db_xref="pID:e1296656" /db_xref="pID:93192012" /translation="MAAKKTETAEATPCECSMYDALPADITEEOVASGDEEN; """COMPAGE TO STANKE	/transl_table=11 /product="hypothetical protein SC2E1.35" /db_xref="PID:e1296555" /db_xref="PID:e1296555" /db_xref="PID:e1296555" /db_xref="PID:e3192011" /translation="MAATKVFPEFTRIDGRKVSFGANYTHDTKAKRRAGLTTAGRPK VETVGAGTVVRSPRRWLPWAVFCTNSAVLGGTWAVAELGPAVGGLTVVGVALWAGYRIA 9023730240 /note="possible RBS upstream of SC2E1.36" /gene="SC2E1.36" /gene="SC2E1.36" /note="SC2E1.36" /codon_start=1 /transl_table=11 /transl_table=11	/db_xref="pib:e1296654" /db_xref="pib:e1296654" /db_xref="pib:e13192010" /translation="MSNRDFSEDVQGPRSTDGPSVDDLRAEMYGGQVAGRFHYRESRT ERDSAVIQGTPVLGDGTMTDDQAAEIRKSFGIGADLRHAAQAAESYMDRRDPTSGHTI RTYGNGRVVDLDAEPTQTGSDRVEYPRVWYGDDPGA" 2948129484 /note="possible RBS upstream of SC2E1.35" 2949329936 /gene="SC2E1.35" 2949329936 /gene="SC2E1.35" /note="SC2E1.35" /note="SC2E1.35" /codon_start=1	2865929075 /gene="SC2E1.34" 2865929075 /gene="SC2E1.34" /gene="SC2E1.34" /note="SC2E1.34" /note="SC2E1.34" /product="hypothetical protein SC2E1.34" /product="hypothetical protein SC2E1.34"

```
gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                   /gene="SC2E1.39"
/gene="SC2E1.39"
/note="SC2E1.39"
/note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="SC2E1.38, whiG, RNA polymerase sigma factor WhiG, len: 280 aa; identical to RPSM_STROO RNA polymerase sigma factor whiG (280 aa). Also highly similar toRPSD_BACSU RNA polymerase sigma-D factor (sigma-28) (224 aa)(E(): 0, 43.0% identity in 242 aa overlap) and FLIA ECOLI RNA polymerase sigma factor for flagellar operon (sigma F) (239 aa)(E(): 0, 42.8% identity in 229 aa overlap). Contains PS00715 and PS00716 Sigma-70 factors family signatures 1 and 2, Pfam match to entry sigma70 PF00140, Sigma-70 factors, score 342.03 and probable helix-turn-helix motif at aa 245 to 266 (Score 1657, +4.83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                factors, score 342.03"
33725...33766
/transī_table=11
/product="putative transcriptional regulator"
/db_xref="PID:e1296659"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34468. .35025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="PID:g3192014"
/translation="MPQHTSGSDRAAIPPAARDGGSVRPPAPSTLDELMRSYKTTGDE
/translation="MPQHTSGSDRAAIPPAARDGGSVRPPAPSTLDELMRSYKTTGDE
RLREQLILHYSPLVKVAGKGRVSVGLPPNVEQADFVSSGVFGLIDAIEKFDVDREIKFE
TYAITRIRGAMIDELRALDWIPRSVRQKARNVERAYATLEARLKRTPSESEVAVEMGI
TYAITRIRGAMIDELKALDWIPRSVRQKARNVERAYATLEATLARTPSESEVAVEMGI
AVEDLHAVFSQLSLANVVALEELLHAGGEGGGRLSLMDTLEDTAADNPVEVAEDRELR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34468.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              34229.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="PS00715 Sigma-70 factors family signature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 33626. .34315
/gene="whig"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RLLARAINTLPEREKTVVTLYYYEGLTLAEIGNVLGVTESRVSQIHTKSVLQLRAKLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30911.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="Pfam match to entry recombinase PF00239,
Site-specific recombinases, score 36.16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AALPYDGPGYRPVPEINLVPPFRVEGRVDPRVLAGPDIQEEVVRPETGVPGPATSALS
AGVHEMLRGDAVLVGDAAEVVELVGAMGELPPERRGPVLPTDLLESRTRQVLAGLPGR
GTATAGEVALKAQTTQDDAVARLYELRALGYVERHGDGWKLTRQAMISVRGGRSPC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LGDDDRLRAMAAEWYGMAAGDQVQHADRIADFDKQIANLDRAIASMATECYKAGLPAA
AIAQASAALLEERROLADLRDEAAAWLEETEAASQARDLEALATAARTKLADMDPAE
QGEVLALLDYKYTITQPYRDRIGLTCGLAEWRYAGRLVPSELTDDMMAAABEVYKA
WEPSNHKLRPGRLMLDAMFYKARTGCRWDDLPERFGPWKGIHSRYKTWRNCGVWDEIM
                                                                                                                                                                codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="SC2E1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note-"possible RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            note="PS00716 Sigma-70 factors family signature 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'gene="whig"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene="whig"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="RNA polymerase sigma factor WhiG'
/db_xref="PID:e1296658"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="SC02E1.37"
/note="PS00397 Site-specific recombinases active site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="whig"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="whig"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="SC2E1.37"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .34339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .34339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1.39"
                                                                                                                                                                                                                                                        regulatory proteins,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               upstream of SC2E1.39"
                                                                                                                                                                                                                                                        tetR family, score
```

```
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                 /note="SC2E1.41, rpsB, 30S ribosomal protein S2, len: 310
aa; almost identical to RS2_STRCO 30S ribosomal protein S2
(242 aa), E(): 0, 96.7% identity in 242 aa overlap and
also highly similar to many others e.g. RS2_ECOLI 30S
ribosomal protein S2 (240 aa), fasta scores; opt: 744
z-score: 950.7 E(): 0, 50.4% identity in 224 aa overlap.
Contains PS00962 Ribosomal protein S2 signature (probably a
false positive). Also contains family signature (probably a
false positive). Also contains fam matches to entry S2
PF00318, Ribosomal protein S2, score 304.89 and to entry
60s_ribosomal protein S2, score 304.89 and to entry
24.36. Note that this sequence is longer than RS2_STRCO
due to a sequence difference around 235 aa. This sequence
has a C-terminal extension not present in other rpsB. The
M. tuberculosis protein also has a C-terminal extension
but with a differentsequence. Our sequence has been
checked, and is also confirmed by sequence from the
/transl_table=11
/product="305 ribosomal protein S2"
/product="305 ribosomal protein S2"
/db_xref="pID:e1296661"
/db_xref="pID:e1296661"
/db_xref="pID:e129661"
/translation="MANVTMELESGYHFGHOTRRWNPKMKRFIFTERNGIVIIDLL
/translation="MANVTMELESGYHFGHOTRRWNPKMKRFIFTERNGIVIIDLL
STENSTUPKAYEFYKETYAHGGTVMFVGTKKOAOEAIAEQATRVGMPYVQRWLGGMLT
NFSTVYKRLORIKELEGIDFEDVAASCLTKKELLVLSREKAKLEKTLGGIREMSKYPS
AVWIYDTKKEHIAVGEARKLMIPVVALLDTNCDPDEVDYKIPGNDDAIRSVTTLTRVI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     35948. .36880
/gene="rpsB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note-"SC2E1 40c, probable secreted protein, len: 226 aa; some similarity to two putative secreted M. tuberculosis proteins YX2_MYCTU MTCY274.22 (249 aa), fasta scores; opt: 315 z-score: 268.8 E(): 9.7e-08, 40.7% identity in 145 aa overlap (also upstream of rpsB) and Y0GK_MYCTU MTCY13D12.20 (407 aa), fasta scores; opt: 218 z-score: 176.1 E(): 0.014, 34.1% identity in 164 aa overlap. Contains probable N-terminal signal sequence."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        35948.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       coelicolor ribosomal protein S2 (rpsB) and elongation factor Ts (tsf) genes from 1 to 2154"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="overlap with cosmid 6A9 (unfinished)"
complement(35666. .35669)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement(35024.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TPWRPPPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VAAGRVSFAGPVGGRGVVSVELTGTGEPPLRTTFAPVDAAVRKGDEVAAGEPLGTVQP
TGSHCTACLHWGLLRGEVYLNPLSLLPPWLLDAGPSRLLPVAGVPVPGRGGISPVRRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="MRARARVVVLSAVLAVLAVPTAQAGRAAGPPPPATAAAAGWALP
YAVGPMGRVDPAVPPVARHWPVGTRPAVLRGWDPPANPYGPGHRGVDLAAGGGAPVRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="SC2E1.40c"
/note="SC2E1.40c"
/note="SC2E1.40c, probable
some similarit-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    regulatory proteins, tetR complement(34979. .35659)/gene="SC2E1.40c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /translation="Maehrsmoraalldaarsllsdggtealtepalaertglarssy
YEYFRSRAAVVEELCAVDFPVWAAEVEAAMERETAPDAKVEAYVRTOLDLVGDRRHRA
VVAISASELDAGAREKIRAAHGGLIAMIVEALGEMGHGQPRLAAMLLQGVVDAAVRRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="possible RBS upstream of rpsB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            note="97.4% match to AF034101 AF034101 Streptomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note-"possible RBS upstream of SC2E1.40c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="hypothetical protein SC2E1.40c"
/db_xref="PID:e1296660"
/db_xref="PID:93192016"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     34501. .34641
/gene="SC2E1.39"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ELGAAEEPGAITEAAVSMALRGVRG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note-"Pfam match to entry tetR pF00440,
regulatory proteins, tetR family, score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'db_xref="PID:g3192015"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .38962)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            , Bacterial 29.18"
```

ADAVAEGLIARSGAAGGAKGDKAAGEPLAAWERDLLEGEKAEKKDDAEAAEKPAEAP#

```
Query Match
Best Local Similarity 54.,
76; Conservative
35657 GAGGGCGCGTGCGAGTGGTGGTGCTGTCGGCCGTCCTGGCCGTCCTGGCGGTCCCGAC 35598
                                   46 GTGGCCGCCTGGAGCAATAATTATGCGGTGGACTGCCCTCAACACTGTGACAGCAGTGAG 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                               6233
                                                                                                                                                                                                                     /translation-"MSSTKAEKSDDGKVSGREMLKLSGEAFSGGGGLGVDPDVVHAIA REIAAVVRDGAQIAIVIGGGNEFFGAELQVRGMDRARSDYMGMLGTVMNCLALQDFLE KEGVDCRVQTAITMGQVAEPTIPLRAVRHLEKGRVVIFGAGMGMPYFSTDTTAAQRAL EIDAEALLMGKKGVDGVYDSDEKTNPDAVKFDALGYGEVITRDLKVADATAVTLCRDN
                                                                                                                                                                                              SLPIVVFELLKEGNIARAVKGEKIGTLVGDQGSRD"
1 13696 c 13758 g 5275 t
                                                                                                                                                                                                                                                                                                                                                                                            /note="SC2E1.43, pyrH, uridylate kinase, len: 253 aa; highly similar to many e.g. PYRH_ECOLI uridylate kinase (EC 2.7.4.-) (240 aa), fasta scores; opt: 668 z-score: 968.6 E(): 0, 45.9% identity in 233 aa overlap"
                                                                                                                                                                                                                                                                                                                     'db_xref="PID:g3192019"
                                                                                                                                                                                                                                                                                                                                 /product="uridylate kinase"
/db_xref="PID:e1296663"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="possible RBS upstream of pyrH"
38017. .38778
                                                                                                                                                                                                                                                                                                                                                                            transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            38004.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GQKGVAKREGRSAENGAVVSIIADDNTSGVLVELKCETDFVAKGEKFQNVATAIAEHV
AKAAPADLEALLASEIEPGKTVQAYVDEANANLGEKIVLDRFAQFSGGFVTAYMHRTM
PDLPPQIGVLVELDKÞNAEIAKGVAQHIAAFAPKYLSKEDVPAEVVESERRVAEETTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Acidic ribosomal p
36975. .37811
/gene="tsf"
36975. .37811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene="pyrH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'note="PS01126 Elongation factor Ts signature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 aegkpeaalpkivegrlngffkdatllgopyaldnkksvokvlbeagvslkrfsrikv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /transi_table=11
/product="elongation factor Ts"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="SC2E1.42, tsf, elongation factor Ts, len: 278.
Almost identical to EFTS_STRCO elongation factor Ts
(EF-TS) (276 aa), fasta scores; opt: 1695 z-score: 2425.0
E(): 0, 97.8% identity in 278 aa overlap and highly
scores; opt: 321 z-score: 681.2 E(): 1e-30, 38.4% identity
in 276 aa overlap. Contains PS01126 Elongation factor Ts
Signature 1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="PID:e1296662"
/db_xref="PID:g3192018"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         translation="MANYTAADVKKLRELTGAGMMDCKKALDEAEGNVEKAVEALRIK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="tsf"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="Pfam match to entry 60s_ribosomal PF00428, 60s
Acidic ribosomal protein, score 24.36"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="PS00962 Ribosomal protein S2 signature 35972. .36625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="PS00211 ABC transporters family signature
36740. .36856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AEAPAAEAAEAPAAEAAPAEEPAAEAPAADAEQa"
35963. .35998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'gene≖"rpsB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Pfam_match to entry S2 PF00318, R1bosomal protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      score 304.89*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              38778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .36505
                                                                                  Score 38.2; DB Pred. No. 0.52; 0; Mismatches
                                                                                                                   _DB 1;
                                                                                    63;
                                                                                                                   Length 38962;
                                                                                Indels
                                                                              0;
                                                                          Gaps
                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
MEDLINE
REFERENCE
AUTHORS
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
SC2E1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ይ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  106
```

RBS

SdC

В

This sequence MAY NOT be the entire insert of the clone. It may be shorter because we only sequence

BASE COUNT ORIGIN

```
35537 GGCCCTGCCCTACGCGGTG 35519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ves bibbibbibbibbibbib
correct initiation codon. Where possible we choose an initiation rodon (atg, gtg, ttg or (att)) which is preceded by an upstream initiation codon). If this cannot be identified we choose the upstream initiation codon). If this cannot be identified we choose the most initiation codon.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The more significant matches with motifs in the PROSITE database are also included but some of these may be fortuitous. The length in codons is given for each CDS.

Usually the highest scoring match found by fasta -o is given for CDS which show significant similarity to other CDS in the database. The position of possible ribosome binding site sequences are given where these have been used to deduce the initiation codon. Generally the sequence of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon of the codon 
                                                                                                                                                                                                                                                                                                                      prediction is based on positional base preference in codons using specially developed Hidden Markov Model (Krogh et al., Nucleic of Bibb et al., Gene 30:157-66(1984) and the FramePlot program http://www.nih.go.jp/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Details of S. coelicolor sequencing at the Sanger Centre are available on the World Wide Web.

(URL; http://www.sanger.ac.uk/Projects/S_coelicolor/) CDS are numbered using the following system eg SC7B7.01c. SC (S. coelicolor), 7B7 (cosmid name), .01 (first CDS), c (complementary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCAAAAGCAGCCCGCGCCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCTGCCGAGTG 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (03-JUN-1998) Streptomyces coelicolor sequencing project, Sanger Centre, Wellcome Trust Genome Campus, Hinxton, Cambridge CB10 18A E-mail: barrellesanger.ac.uk Cosmids supplied by Prof. David A. Hopwood, [3] John Innes Centre, Norwich Research Park,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Streptomyces coelicolor sequencing at The Sanger Centre is funded by the \mathtt{BBSRC}.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Colney, Norwich, Norfolk NR4 7UH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   330S ribosomal protein S16; 30S ribosomal protein S2; 50S ribosomal protein L19; cell division protein FtsH homolog; elongation factor Ts; ffh; ftsH; glnB; glnD; nitrogen regulatory protein pII; prophage; protein pII uridylyltransferase; pyrH; RNA polymerase recognition particle protein; sipB; rpsP; signal peptidase I; signal recognition particle protein; sip1; sip2; sip3; sip4; trmD; trNA (guanine-NI) methyltransferase; tsf; uridylate kinase; whig.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3 (bases 1 to 38962)
Parkhill, J., Barrell, B.G. and Rajandream, M.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A set of ordered cosmids and a detailed genetic and physical map for the 8 Mb Streptomyces coelicolor A3(2) chromosome Mol. Microbiol. 21 (1), 77-96 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Streptomycetaceae; Streptomyces.

1 (bases 1 to 38962)

Redenbach, M., Kleser, H.M., Denapaite, D., Eichner, A., Cullum, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Streptomyces coelicolor. Streptomyces coelicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eubacteria; Firmicutes; Actinomycetes; Streptomycetes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 38962)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and Harris, D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   38962 bp DNA coelicolor cosmid 2E1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       04-JUN-1998
```

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SdC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            overlapping sections once, or longer, because we arrange for a small overlap between neighbouring submissions. Cosmid 2E1 lies between 7A1 and 6A9 on the AseI-B genomic restriction fragment.
                                                                                                                                                                                                                                                                                                                                                                                /gene="ffh"
2735.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="glnD"
/note="possible F
2735. .4387
                                                                                    /mote-"SC2E1.03, ffh, signal recognition particle protein, len: 550 aa; highly similar to mnay e.g. SF54_ECOLI (453 aa), fatsa scores; opt: 1465 z-score: 1282.8 E(): 0, 50.08 identity in 458 aa overlap. Contains PS00017 ATP/GTP-binding site motif A (P-loop), PS00300 SRP54-type proteins GTP-binding domain signature and Pfam match to entry SRP54 PF00448, SRP54-type proteins, score 66.57. Similarities suggest possible start site at aa 35".
                                                                                                                                                                                                                                                                                                                                                               2735. .4387
/gene="ffh"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="glnD"
/note="SC2E1.02, probable glnD, protein pII
uridylyltransferase, len: 835 aa; similar to many e.g.
GLND_ECOLI (890 aa), fasta scores; opt: 403 z-score: 540.4
E(): 7.3e-23, 26.2% identity in 851 aa overlap. Contains 7
degenerate repeats of the sequence PSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGDVTWREVGRVLRSRSVRPRLRAMMNGRNGGKPVAERSPLAEGVVEQDGEAVLARTA RPERDPALPLRAAAAAAQAGLDLSRHAVRRLAATARPLPTPWPAEAREQLVTLLGSGR RPERDPALPLAEAAAAAQAGLDLSRHAVRRLAATARPLPTPWPAEAREQLVTLLGSGR PTVQVWEALEAEGLVTRLLPDWERVRCRPQRNAVHLWTUPLIETAVRAAGFTRAVRAAGFTRLLDVRHFLLLV RPDLLLLAALLHDIGKGWPGDHSVAGETIARDVAARIGFDGADTAVLATLVRHHLLLV ETATRRDLDDPATVRAVAQAVCTEHTLEILHALTEADALATGPAAWSSWRGSIVADLV KRVSGVLAGEPQPEAESAAPTAEQERLAVEAFRTGGPVLALRAQTEPPADSAPAPSSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="ĬRIEVLVEDDDAEQLIDVVVKAARTGKIGDGKVWAVPVDTAVRVRTGERGPDAL"
231. .2738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note-"SC2E1.01, glnB, nitrogen regulatory protein pII, partial CDS, len: >54 aa; highly similar to many e.g. GLNB_AZOBR (112 aa), fasta scores; opt: 198 z-score; 381.9 E(): 4.9e-14, 50.0% identity in 54 aa overlap"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SSPSFPSPLSSPSSADGPEPLGVELLIAVPDQAGVLPAVAGVLAMHRLTVRTAEI
RSVPLPDGVEGSVLLLDWRVAAQYGSLPQAARLRADLVRALDGTLDIAARLAERDAAH
RRRKOVEPPPPRTTVAPAASRLATVIEVRAQDAPGLLFRLGRALEAAGVRVRSAHVST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GLFGAATEEHTGISLVAVGGYGRGELSPRSDLDLLLLHDGRDDKAVÄALÄDRLMYPVW
DLGIDLDHSVRTPQOARKTAGODLKVHLGLLOARHLAGDLGLTASLRTAVLADWRINQA
PKRLPELRDLCAERAERGGELOFLLEPDLKEARGGLRDATALRAVAASMLADAPREGL
AEARRRLLDVRDALHLATGRATDRLALQEQDQVAAELGLLDADALLRQVYEAARVISY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="glnD"
231. .2738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="putative protein pII uridylyltransferase"
/db_xref="pID:e1296622"
/db_xref="pID:93191978"
/translation="MTDEAEDSGPGGYAAARLRLLTEGARSGPPRRRALAELTDGWLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene=
   'product="signal recognition particle protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "GANAVDAFYVTRGEGTPLPGDEAASVARGLEESLRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="nitrogen regulatory protein pII"
/db_xref="PID:e1296621"
/db_xref="PID:g3191977"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone="cosmid 2E1"
1. .166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Streptomyces coelicolor"
/strain="A3(2)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       transl_table=11/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /transl_table=11
                                                                       codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                codon_start=2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'db_xref="taxon:1902"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "glnB"
                                 _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  degenerate 9bp repeats"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RBS upstream of ffh"
                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                stem_loop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref-"PID: 93191980"
//translation-"MYNPSPPRKAPEPWRTEGTPDEPPKPPPGGRRMRGGWWNLILA
ALIVYLIANLYLSFENEGDEPTISYTEFSKQVDEGNVSKIYAKGDAIQQLKKARDNP
EGDGTYTKFTTERFTFADDQLWADLIKNRVTYTAEPVVQHRSFLANLLIALAPMLIU
VLWIFIARRMGALGGGAGGMLGRKAPPKPVELLEAGKPRTTFADVAGIDEVEGELSDV
VDFLKNEDAYRRMGAKMPRGVLLTGPPGTGKTLLARAVAGEAGVPFFSASASEFIEMI
VGVGASRVRELFAEAKKVAPSIIFIDEIDTIGRARGGGSTGGHDEREQTLNQILTBU
DGFSGSEGVIVLAGTNRADILDAALTGPGRFDRVSVSPPDBRGCREAILEHFREIPL
APDIDLAQVARTTPGMTGAELANLANEAALLAVKRKQERVTQANLSEALEKVQLGAER
PLYMPEEERRRYAYHESGHALLGMLQPGADPVRKITIVPRGKALGVTLSTPDADKYAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note-*SC2EI.04, ftsH, cell division protein FtsH homolog (zinc metalloprotease, integral membrane protein), len: 648 aa; similar to many e.g. FTSH_LACLA (695 aa), fasta scores; opt: 1489 z-score: 1195.5 E(): 0, 41.7% identity in 640 aa overlap. Contains PS00017 ATP/GTP-binding site motif A (P-loop), PS00674 AAA-protein family signature and Pfam matches to entry AAA PF00004, ATPases associated with various cellular activities (AAA) and to entry zn-protease PF00099, Zinc-binding metalloprotease domain, score 22.07, score 357.96. Proline-rich N-terminus is not present in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .3688
/gene="ffl
                           /note="Pfam match to entry zn-protease PF00099, Zinc-binding metalloprotease domain, score 22.07" complement(6468...7085)
                                                                                                                                                                                                                        /gene-"f
                                                                                                                                                                                                                                                                                                                                                                                          /note="Pfam match to entry AAA PF00004, ATPases associated
with various cellular activities (AAA), score 357.96"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TEEYLRGRIIGALGGMAAEHVVYGMITTGSESDLEQVTNIARGMVARWGMSERVGRLS
ALPGDAQQAYGLAAAPQTLDAIDGEMRRVVDSCYEEAVRKLRDHRGQLDALAESLLAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 score 357.96. Proling other ftsH homologs"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /"OTE="hairpin loop with 22/23 bp stem" 4504. .6450
/gene="ftsH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             proteins, 3647. .368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VHDLVIVDTAGRLGIDQELMQQAADIRDAVSPDEILFVVDAMIGQDAVNTAEAFRDGV
GFDGVVLSKLDGDARGAASKASKITCKF INFAGEKLDDFDFPDRMASRILDMG
DLLTLIEQAEKTFSQEEAEKMASKLASKKGQDFTLDDFLAQMEQVRKMGSISKLIGME
PGMGQMKDQIINIDERDVDRTAAIIKSNTPGERQEPTIINGSRRARIAKGSGVEVSAV
KNLVERFFEARKMMSRMAQGGGMPGMPGMPGMGGGPGRQKKQQKKAKGKQRSGNPMKR
                                                                                                                                                                                                                                                                                                                                                                   5230.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ETLDEADAYRIAGITRLTKDDPEA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           signature'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /translation="MTVRSVQRAGTLCLPGRIPWRTTHTNADARTYAAVFDTLSDRLS
ATFKSLRGKGRLTEADIDATAREIRIALEADVALPVVRAFIKKVKERSIGAEVSKAL
NPAQOVLKIVNEELVGILGGETRRLERAKQPFVINHLAGLQGAKKTILAGKLGHUKE
GGHSPLLYACDLQRPNAVNQLSVVAERAGVAVYAPEPGNGVGDPVKVAKDSIEFAKAK
/gene="SC2E1.05c"
                                                                                                                                                                                                                                                                                            /note="PS00017 ATP/GTP-binding site motif A (P-loop)"
                                                                                                                                                                                                                                                                                                                          /gene=":
                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="ftsH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="cell division
/db_xref="PID:e1296624"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="PS00017 ATP/GTP-binding site motif A (P-loop)"
3566. .3997
/gene="ffh"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="PS00300 SRP54-type proteins GTP-binding domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Pfam match to entry SRP54 PF00448, proteins, score 66.57"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'gene-"ffh"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KQQEQEEAARRAAAAQSGGALGLPQQGGQDFELPDEFKKFMG*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="PID:e1296623"
/db_xref="PID:g3191979"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               codon_start-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1504. .6450
'gene="ftsH"
                                                                                                                                                                                         PS00674 AAA-protein family signature"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein FtsH homolog"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SRP54-type
```

```
RBS
                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SdC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                      9645. .10064
/gene="rpsp"
/note="SC2E1.08, 1
                                                                                                                              *Cranslation-"MAVKIKLKRLGKIRSPHYRIVVADSRTRRDGRAIEEIGKYHPTY NPSVMEVDAERVAYWLGVGAQPTEPVLAILKKTGDWQKFKGEPAPAPLLQPAEKAARP SFEALGGEDEGKGEAITQKKKADKKDEAAAESSASEA" 9651. .9680
                                                                                                                                                                                                     /product="308 ribosomal protein
/db_xref="PID:e1296628"
/db_xref="PID:93191984"
                                                                                                                                                                                                                                                                                                      /note="SC2E1.08, rpsP, 30S ribosomal protein S16, highly similar to many e.g. RS16_MYCTU (162 aa), fatsa scores; opt:480 z-score: 771.3 E(): 0, 56.3% identity in 144 aa overlap. Contains PS00732 Ribosomal protein S16 signature"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="hypothetical protein SC2E1.07"
/db_xref="pID:e1296627"
/db_xref="pID:e1191983"
/db_xref="pID:g3191983"
/translation="MSTTPPVLAAELAQAWADIQRHHTELPDLAAPESLIGESSSACG
/translation="MSTTPPVLAAELAQAWADIQRHRTELPDLAAPESLIGESSSACG
HELSFERLHEAVHGIAAARGVRDTSRAGRYHNRRFLAIAEELGLDHPEEPHPSSGFS
LVTLTPEAKRRYRPTIERLQRALKAHTVATATDTARSFRGPAARHGSSGGGVRVKAVC
                                                                         note="PS00732 Ribosomal
                                                                                                                                                                                                                                                                                 transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DCGRNVRVVPSVLAQAPIMCGGCGKPFRIPEVVGAGMS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ERLDVGGDTRMLGLNCGSGLALLMAASRGAAVTGVDSRSPELLDLARRRLLSGTSGDP
GADSTVSTRTRGDAPRIVQGTPGDAADFTAPAFTLVTAFEPGGCRAGDSETLGDLLAR
ATPLAARGAAVVLAGWGPPERCATTSVLRVAAKLTDPTHGTGGWRPALEDDLLEEVAD
AGLRPDGSGRVACPFGYADTGSAVRGLLSTGWFDAAVAATDRDQVDKELTEALHPYQR
PDGTVWMPNVFRYLIARVR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'note="
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="SC2E1.07"
8793. .9389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="SC2E1.07"
/note="SC2E1.07, unknown,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="hypothetical protein SC2E1.06c"
/db_xref="pID:e1296626"
/db_xref="pID:g3191982"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement(7092...7096)
/note="possible RBS upstream
complement(7236...8123)
/gene="SC2EL.06c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="MTPTLYROHSSHAQATPHYDPRARARDWSEIQERMLYPLYEAVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(7236. .8123)
/gene="SC2E1.06c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="PS00013 Prokaryotic
attachment site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                transl_table=11/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note="SC2E1.06c, unknown,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement(7014. .7046)
/gene="SC2E1.05c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="MPHRTTALRLAAPVAVLALALTACGGGDDDSGTDAKGGATTEAT
TQASPSAPSQPASGGMAQGESASGKVAEGPGEVTYDVLAQKVEVGTEAEAAKAVADAA
DAKGKVLATAHIKYTHGGGPALTEGSDVHDGTTVFADGQRGGVLIGAAEDAPGCEDPY
DAESWKQGESHYFCETYVIPAGATSVEVHWSEEDGEPYVWKFPQK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CONTAINS N-terminal signal sequence and appropriatel positioned PS00013 Prokaryotic membrane lipoprotein attachment site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="putative lipoprotein"
/db_xref="PID:e1296625"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'db_xref="PID:g3191981"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(6468.
/gene="SC2E1.05c"
/note="SC2E1.05c,
                                                              .10059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           possible RBS upstream of rpsp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .7085)
                                                                protein S16 signature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Len:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Len:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      membrane lipoprotein lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of Sc2E1.05c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               198
                                                                                                                                                                                                                                                   S16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  295 aa*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pidit
                                                                                                                                              CDS
                                                                                                                                                                                   gene
                                                                                                                                                                                                                                 RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
/note="SCZE1.12, rpls, 50s ribosomal protein L19, le
116aa: highly similar to many e.g. RL19_MYCTU (113 a
fastascores; opt: 571 z-score: 1138.4 E(): 0, 77.3%
identity inl10 aa overlap. Contains PS01015 Ribosoma
                                                                                                                              /gene="rpls"
11954. .12304
                                                                                                                                                                         /note="possible 11954. .12304
                                                                                                                                                                                                                                                                 HNTVDDTPYGGGPGMYMKTEPWGDALDSVLADGYETGCGEPALVVPTPSGRPFTOELA
VHLSERPWLIFTPARYEGIDRRVVDEYATRMPVYEVSIGDYVLAGGEAAVLVVTEAVA
RLLPGVLGNAESHRDDSFAPGAMANLLEGPVHTKPPQWRGRGIPDVLLSGHHGKIARW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="SC2E1.11, trmD, probable tRNA (guanine-N1) methyltransferase, len: 277 aa; similar to many e.g. TRMD_ECCLI (EC2.1.1.31) (255 aa), fasta scores opt: 437 z_score: 660.6E(): 1.5e-29, 41.2% identity in 2
                                                                                                           'gene="rpls"
                                                                                                                                                                                                                          11939
                                                                                                                                                                                                                                            RRDEALRTTANRPDLIERCDPAAFDKKDREMLSILGWQPDPDGEPYGRFWRRTPGME
                                                                                                                                                                                                                                                                                                                          /product="trNA (guanine-N1)-methyltransferase"
/db_xref="pID:e1296631"
/db_xref="pID:93191997"
/translation="MRLDVTIFPEYLEPLNVSLVGKARARGQLGVHVHDLRDWTYDR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="MQLVVARIGRAHGIKGEVTVEVRTDEPELRLGPGAVLATDPAST GPLTIESGRVHSGRLLLRFAGVHDRTGAEALRNTLLLADVDPDERPEDEDEYYDHQLI DLDVVTEDGTEVGRTTEISHLPTQDLFVVERPDGSEVYVPFVSEIVTGIDLDAQRAVI DPPPGLIDDRAEIASARDAGAEDAGDEA"
                                                                                                                                                                                                                                                                                                                                                                                                                                             transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="trmD"
10984. .11817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hypothetical proteins from many organisms e.g. YX38_MYCTU MTCY274.38c (176 aa), fasta scores; opt: 479 z-score; some similarity to RIMM_HABIN 165 rRNA processing protein 0.018, 27.6% identity in 170 aa overlap. 8 (176 aa), fasta scores; opt: 210 z-score: 174.2 E():
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product-"hypothetical product-"PID:e1296630" /db_xref-"PID:93191986"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note-"possible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'gene="SC2E1.10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1067. 10306
/gene="adjm1.ge"
/note="602m1.ge"
small hypothetical proteins from several organ/
YX40_MYCTU MTCY274.40c (80 aa), fasta scores;
YX40_MYCTU MTCY274.90c (80 aa), fasta scores;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="SC2E1.10"
/note="SC2E1.10, unknown, len: 188 aa; similar to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note-"possible RBS
10418. .10984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /translation="MLEEALEHLVKGIVDNPDDVQVASRNLRRGRVLEVRVHPDDLGKVIGRNGRTARALRTVVGAIGGRGVRVDLVDVDHVR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /transl_table=11
/product="hypothetical protein
/db_xref="pID:e1296629"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10067. 10306
/gene="SC2E1.09"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'db_xref="PID:g3191985"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="possible RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="rpsp"
                                                                                                                                                                                                                       .11942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .11817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .10407
                                                                                                                                                                                              RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RBS
                                                                                                                                                                                     upstream of rpls'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                upstream of trmD'
                                                                50S ribosomal protein L19, len:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              upstream of SC2E1.10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       upstream of SC2E1.09"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein SC2E1.10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from several organisms, e.g. aa), fasta scores; opt: 356 71.6% identity in 74 aa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SC2E1.09*
      Ribosomal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bimilar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           238
```

```
gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     stem_loop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          •
                                                                                                                                                                                                                                                                                     /note-"SC2E1.14, sip2, probable signal peptidase I, len:
446 aa; similar to many e.g. LEP HAEIN signal peptidase I
(EC 3.4.21.89) (349 aa), fasta scores; opt: 151, z-score:
317.3 E(): 1.9e-10, 30.1% identity in 286 aa overlap.
Contains P800761 Signal peptidases I signature 3, Pfam
match to entry signal peptidases I signature 3, Pfam
match to entry signal peptidases I signature 3 of fam
score 42.41 and probable transmembrane domain. Also
similar to surrounding genes sip1 (E(): 9.7e-24, 44.9%
identity in 274 aa overlap), sip3 (E(): 1.8e-28, 56.3%
identity in 223 aa overlap). Note that after aa 325 the
ORF overlaps the downstream sip3 gene SC2E1.15, and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="SC2E1.13, sip1, probable signal peptidase I, len:
259 aa; similar to many e.g. LEP_HAEIN signal peptidase I
(EC 3.4.21.89) (349 aa), fasta scores; opt: 162 z-score;
381.2 E(): 5.3e-14, 32.5% identity in 243 aa overlap,
though with large internal deletions. Contains PS00761
Signal peptidases I signature 3, Ffam match to entry
signal_pept_I PF00461, Signal peptidases I, score 51.12
and probable transmembrane domain. Also similar to
downstream genes sip2 (E(): 9.7e-26, 44.9% identity in 274
aa overlap) and sip4 (E(): 8.7e-08, 37.0% identity in 254 aa
overlap) and sip4 (E(): 8.7e-08, 37.0% identity in 219 aa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="sip1"
12350. 13129
/gene="sip1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="Pfam match to
peptidases I, score 5
12869. .12910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PGGRITVTLLILLFLLLVSTFVLQPFQIPSGSMERGLRIGDRVLVNKLAYRFDGRPR
RGDIVVFDGTGSFGHGDYIKRVVGVGGDHVVCCDEEGRVRVNGQPVDESAFLYPGDRP
STVPFDVVVPDGTLFVLGDHRSDSSDSRDHLGSPGGGMVPLDDVIGRADWIVWPFGHA
                                                                                                                                                                                            positional base preference suggests that translation is the other frame. No error in the cosmid sequence can be found to account for this"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13122. .14462
/gene="sip2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="hairpin loop with 34/41 bp stem" 12509. .12799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GVVIRRQGAGVRETFTVRKVSFSVGVERTFPVHTPIVEKIELVTRGDVRRAKLYYLRE
                                                                 /product="putative signal peptidase
/db_xref="PID:e1296634"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TRLDRPDAYARVPDAEAGAGAASGAGAAPDPGAAPDGDADG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /transl_table=11
/product="putative signal peptidase
/db_xref="pID:e1296633"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LRGKAAKIKEKRDS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="50S ribosomal protein L19"
/db_xref="PID:e1296632"
/db_xref="PID:g3191988"
/translation="MSHLLDSVDAASLRSDYPAFRPGDTVNVHYRVIEGNRSRVQQFK
                                                                                                                                     /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'gene="sip2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note="PS00761 Signal peptidases I signature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="sipi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene="sipl"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="sip1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="PID:g3191989"
/translation="MDTETQHTERDRSSRPSDSEQPSEPEGPEERSRSAFTGRIGDWL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 orotein L19 signature"
/codon_start=1
translation="MGSRGKPRGAPSSPAENLLPTGSRRTAAPSGGRSRAERRKLQRK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'note="PS01015 Ribosomal protein L19 signature"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         transl_table=1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  o entry signal_pept_I PF00461, Signal
51.12"
                                                                                                                                                                                                                                                                    ä
```

RBS

misc_feature

misc_feature

misc_feature

Sg

```
TR:E1228248 (EMBL:Y09474) signal peptidase I (291 aa), fasta scores; opt: 1997 z-score: 2287.4 E(): 0, 99.7% identity in 291 aa overlap, and similar to many others e.g. LEP_PHOLA signal peptidase I (EC 3.4.21.89) (203 aa), fasta scores; opt:222 z-score: 404.9 E(): 2.6e-15, 37.9% identity in 232 aa overlap. Contains PS00761 Signal peptidases I signature 3, 2x Pfam match to entry signal_pept_I PF00461, Signal peptidases I, scores 48.83 and 46.79 and probable transmembrane domain. Also similar to surrounding genes sip1 (E(): 7.6e-20, 35.8 identity in 264 aa overlap) and sip4 (E(): 6.6e-15, 36.3% identity in 245 aa overlap). Note that a more upstream start was chosen due to positional base preference"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 peptidases I,
13755. .13796
/gene="sip2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="Pfam match to entry signal_pept_I PF00461, Signal peptidases I, score 48.83" 14632. .14907 /gene="sip3"
/gene="sip4"
/gene="SC2E1.16, sip4, probable signal peptidase I, len:
/note="SC2E1.16, sip4, probable signal peptidase I
258 aa; similar to many e.g. LEPS_BACSU signal peptidase
(EC 3.4.21.89) (184 aa), fasta scores; opt: 258 z-score:
(EC 3.4.21.89) (184 aa), fasta scores; opt: 278 accore:
337.6 E(): 1.4e-11, 32.2% identity in 177 aa overlap.
                                                                                                                                                                                                                                                                                                                                                                                                             peptidases I,
14809. .14850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FLVQAFSIPSSSMENTLQIGDRVLVDKLTPWFGSEPERGEVVVFHDPADWLAGEPTPD
PNALQTVLSWIGLMPSAEEKDLIKRVIGVAGDTVECNKTGPLKVNGKALNEPYVYPGN
TPCSDDDQGGRFKVTVPEGKIWVMGDHRQNSRDSRYNQSDKNGGMVPVDEVVGRAIVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="PID:g3191991"
/translation="MGDVAVGARSGHDGEENRGRPEERSGPAAVGAPDSGHGSGTEDG/translation="MGDVAVGARSGHDGEENRGRPEERSGPAAVGAPDSGHGSGTEDGRTNGQRGQDGHNGGTEDEGVGGTPPATPPAAKKQRSFWKELPILVGIALVTALLIKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PWFGSEPQRGDVVVERDPGGWLQGEQTTKKDDPVVVKQVKEGLAFIGLLPSDDEKDLI
KRVVGVGGDHYKCCDKQGRVTNNGVPLTEDYLYPGDRESRTPEDVTVPEGRLWVMGDH
RSNSADSRAHQGTDFGTVSQDEVVGRAMVIAWPFGHWTILDEPKTYASVSDDASGSTA
APELSHRVAPYDPNAMMELPTPAELPLVMGVVGLRRIRGRRRQRVRSWRGGCGGWRTV
                                                                                                                                                                       /gene="sip4"
15210. .15986
                                                                                                                                                                                                                                      /note="possible
15210. .15986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14302. .14547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AWPMNRWGTLPVPDTFDQDGLQARSSAAAALSVAPQGLAVAGVVPFVWWRRRRTAPAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="possible RBS upstream of sip3"
14095. .15105
/gene="sip3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13859. .15213
/note="97.8% match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RSRRRGEPRTPRGEVRSGRGRRPRLRTRLRNRGRQGDERTARAGRTQRRDGGRGSRRD
ATRDPARGQEAALLLEGAADPGRHRAGARPADQDVPGAGVLDPVLLDGEHPSDR"
                                                                                                                                                                                                                                                                                                                                           note="PS00761 Signal peptidases I signature
                                                                                                                                                                                                                                                                                                                                                                              /gene="sip3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note-"Pfam match to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="sip3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="putative signal peptidase
/db_xref="PID:e1296635"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="Pfam match to entry signal_pept_I PF00461, Signal peptidases I, score 42.41"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VKRRRRRGAVKEIPLLVGVAVLIALVLKTFLVQAFVIPSGSMEQTIRIGDRVLVDKLT
                                                                                                                                                                                                                                                                                                               5197. .15202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4095. .1510
/gene="sip3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="sip2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'note="SC2E1.15, sip3, probable signal
'36 aa; identical to, but longer than,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4085.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'note="PS00761 Signal peptidases I signature 3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ividans sip gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                score
                                                                                                                                                                                                                                                                         RBS upstream of sip4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to EMBL:SLTK24SIP Y09474 Streptomyces from 5 to 1359"
                                                                                                                                                                                                                                                                                                                                                                                                                                                o entry signal_pept_I PF00461, Signal
46.79"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       probable signal peptidase I, len:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Η,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S. lividans sip
```

gene

RBS

misc_feature

misc_feature

misc_feature

Sg

356

```
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                       /gene="SC2EI.19" unknown, len: 130 aa; similar to M. /note="SC2EI.19, unknown, len: 130 aa; similar to M. /note="SC2EI.19, unknown, len: 130 aa; similar to M. /note="SC2EI.19, unknown, len: 130 aa; similar to M. /note="SC2EI.19" MTCY274.29c MTCY274.29c /note="Scale: 130 aa; similar to M. /note="SC2EI.19" /note="SC2EI.19" /note="SC2EI.19" /note="SC2EI.19" /note="SC2EI.19" /note="SC2EI.19" /note="SC2EI.19" /note="SC2EI.19" /note="SC2EI.19" /note="SC2EI.19" /note="SC2EI.19" /note="SC2EI.19" /note="SC2EI.19" /note="SC2EI.19" /note="SC2EI.19" /note="SC2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note="Sc2EI.19" /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="pid:g3191994"
/translation="mgaedlekyetemelklyreyrdvvglfkyvieterrfyltndy
/emqvhsvqgevffevsmadawvwdmyrparfvkqvrvltfkdvnieelnksdlelpgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="SC2E1.18, unknown, len: 102 aa; highly similar M. tuberculosis hypothetical protein YX32_MYCTU MTCY274.32c (101 aa), fasta scores; opt: 515 z-score: 1085.2 E(): 0, 75.0% identity in 100 aa overlap"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="hypothetical protein SC2E1.18"
/db_xref="PID:e1296638"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="SC2E1.18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="MTPAGODTYEGGLRRVARVVLLDPEDRILLLHGHEPDDPADDWWFTPGGGVEGDETRAEAARRELLEETGITDVELGPVLWRRRCSFPFAGRRWDQDEWYYLARTATEAVGPGLTELERRSVAGARWWTCEELTRARETVYPTRLAELLTTLLDEGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="SC2E1.17, unknown, len: 172 aa; similar to C-terminus of M. tuberculosis hypothetical protein TR:006205 (EMBL:295387) MTCYIA10.24 (351 aa), fasta scores; opt: 345 z-score: 375. E(): 1.2e-13, 44.7% identity in 161 aa overlap. Contains PS00893 mutī domain signature and Pfam match to entry mutī PF00293, Bacterial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16132. .16191
/gene="SC2E1.17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note="PS00893 mutT domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Pfam match to protein, score 37.78"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16069.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PAGPVTLDTEIV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mutT protein, score 37.78"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene-"SC2E1.17"
15988. .16506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'gene="SC2E1.17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="PID:g3191993"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="hypothetical protein/db_xref="PID:e1296637"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="Pfam match to entry signal_pept_I PF00461, Signal
peptidases I, score 49.57"
15988. .16506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /translation="MGGESTTRTVPRGGGANKGPVGSRTGQRLSGIAVALGLVLFLGGFAWGAVVYRPYTVPTSSMTPTIDAGDRVLAQRLDGADVRRGDVVVFKDATWANAPMVKRVAVGDTVSCQQGKLKVNGKVIDEPYLPAGTPAEISDFQTVTVPBGRLFLLGDERKRNSVDSTAHLTDAAAGTVSRGAVDARVDAVAWPMDGMLERPTGFRTLGDLSSPGPLRTVVVLVIAGAVLILLGGAAYGPLAKRAAASRARKGAEPAGGR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contains Pfam match to entry signal_pept_I pF00461, Signal peptidases I, score 49.57 and probable transmembrane domain. Also similar to upstream genes sipl (E(): 8.8e-10.5% identity in 219 an overlap), sip2 (E(): 3.8e-13, 35.9% identity in 223 an overlap) and sip3 (E(): 8.1e-15, 35.9% identity in 237 an overlap)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="putative signal peptidase
/db_xref="pID:e1296636"
/db_xref="pID:g3191992"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="s:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .16871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .16871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 signature"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mutr PF00293,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SC2E1.17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PF00293, Bacterial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacterial mutT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Signal
                                                                                                                                                                                                  gene
                                                                                                                       Sdo
                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="SC2E1_21"
/gene="SC2E1_21"
/note="SC2E1_21"
/note="SC2E1_21"
/note="SC2E1_21"
/note="SC2E1_21"
/note="SC2E1_21"
/note="SC2E1_21"
/note="SC2E1_31"
/note="SC2E1_31"
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
/codon_start=1
                                                                                                                                                                                                                          /note-"probable prophage: has low GC (approx 66-68%), and some ORF's with similarities to bacteriophage ORF's. The ORF SC2E1.21 appears to have been interrupted by this prophage and apparently continues as the last part of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARAGRADPGRDLAVARSAGAREVVPGTAEWPCQLDDLGDARPLGLWVRGGPSLRMWA
LRSVAVVGARACTEYCAHMAATLAAGLAERGWVVVSGGAYGIDGAAHRCALGAGGATA
AVLACGVDRPYPPGHTALITRIAEQGLVVGELPPGDHPTPSRFILRNRYIAALTRGTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="hypothetical protein SC2E1.21"
/product="hypothetical protein SC2E1.21"
/db_xref="pID:e1296641"
/db_xref="pID:93191997"
/tdb_xref="pID:93191997"
/translation="MSGNTREPEGAAPSGDTGPGTSGTLFPEAAVSFGGGSSPAEGGAM/TFGAGDGPDGGEARWAGPGFDGDGAVTGAGVAARGRSAACTGGGGGGGGGSGARGGGPEDRELLGRVYLAWVFEPGDEAGGRWVRERGAPEVVRRLREGGRALPGVSEKRWAGL
                    /gene="SC2E1.22"
/note="SC2E1.22,
                                                                                                           /gene="SC2E1
20271. .2058
                                                                                                                                                                                                                                                                                                                                                                                                                                             VVEAAHRSGSLVTARAARRLGRHVMGVPTPLSGGAALAPIRFRLATAT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="hypothetical protein SC2E1.20"
/db_xref="piD:e1296640"
/db_xref="piD:e1296640"
/db_xref="piD:e1296640"
/db_xref="piD:g3191996"
/translation="MeFARICSVALVGVEGVVVEVQADLEPGVAAFTLVGLPDKSLTE
SRDRVRAAVVNSGAQWPQKKLTVGLSPASVPKSGSGFDLAVAASVLGAAERIDPRVLA
STDTWIGELGLDGRVRPVRGILPAVLAAAEAGYEQVVVPECAAPEASLYPGVSVLGVRS
LRQLIAVLADEPVPEEEQDLOGRPDPLMAGLENFGTGAATGMHGMGAAQHDHGHDLAD
VVGQESARTAVEVAAAGRHHLFLEGPPGAGKTMLAERLDAILPELCRAESLEVTAVHS
VACTTEDOVETTENAVAAGRHHLFLEGPPGAGKTMLAERLDAILPELCRAESLEVTAVHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="SC2E1.21"
18944. .20092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="SC2E1.20"
/note="PS00017 ATP/GTP-binding site motif A (P-loop)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VGHDRPDARDVALALQLRTGVPRGVPMALGALA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VAGLLEPGKPLLDVARYCAPHHSATMOALVGGGPGIARPGAVSLAHRGVLELDETPEF
SSHALDALRQPLEAGHVVIARSAGVVEFPARFLMVLAANPCPPGGRESRTDELCECPSS
AIRRYQARLSGPLLDRVDLKVEVERVTRSQLAGDGPRGDSTRAVADRVRAARDRAAAR
LAGTPWRSNSEVPGRELRTRWRAAAGALDEAERSLERGVLTARGLDRVLRVAWTVADL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="SC2E1.20, unknown ATP/GTP binding protein, len: 541aa; similar to hypothetical proteins from many organisms e.g. YIFB_ECOLI (516 aa), fasta scores; opt: 3 z-score: 935.9 E(): 0, 37.0% identity in 513 aa overlap. Contains PS00017 ATP/GTP-binding site motif A (P-loop)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18048.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /translation="MIVGAGGGADMNARGAMGRYGETLAARRLTGAGMTVLERNWRCG
RTGEIDIVARDGDVLVVCEVKTRRGGAFEHPMAAVTPDKAERLRRLAERWIQTHGGAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="SC2E1.20"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PGGVRIDLVGVLLPQRGAPVVEHARGVA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="hypothetical protein SC2E1.19"
/db_xref="PID:e1296639"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'db_xref="PID:g3191995"
                                                                                                                                                                                         20582
unknown prophage gene, len: 103
```

SGS

Sg gene

gene

```
gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                              complement(21969. .22166)
/gene="SC2E1.26c"
complement(21969. .22166)
/gene="SC2E1.26c"
/gene="SC2E1.26c"
/note="SC2E1.26c, unknown p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="SC2E1.24"
/note="SC2E1.24, possible prophage transcriptional
/note="SC2E1.24, possible prophage transcriptional
/note="SC2E1.24, possible prophage transcriptional
/note="SC2E1.24, possible prophage transcriptional
regulator, len:64 aa; similar to the reterior seys Streptomyces phaeochromogenes
plasmid pJV1 TR:054677 (EMBE:U23762) trans (245 aa), fasta
scores; opt:137 z-score: 268.5 E(): le-07, 39.3% identity
in 61 aa overlap. Contains Pfam match to entry gntR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="possible RBS upstream of SC2E1.23"
20920. .21099
/gene="SC2E1.24"
                                                                                                                                                                                                                                                                                 LPDPQTKEIDPGEPT"
                                                                                                                                                                                                                                                                                                                                   VDRVDQIQNVFIGQGQDTHGREVAERAATRLAEQRQKFHFDFLNHALKQAEWTFRLSV
WFWTGGALVILAGAVLALVHAGNPDLSYLPLVTSLTGALITVGGGALALHSKRAMANL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="possible RBS upstream of SC2E1.25"
21209. .21910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(20579. .20869)
/gene="SC2E1.23c"
/note="SC2E1.23c, unknown prophage gene, len:
                                                                                                                                                                                                                                                                                                         TKAAEDNENKIDIDHKLEVATTFIDRVQDSQAKDRLNSAAALKALGMDAQPETMVNRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="SC2E1.25"
/note="SC2E1.25, unknown prophage gene, len:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="SC2E1.25"
21209. .21910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PF00392, Bacterial regulatory proteins, gntR family, score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="SC2E1.24"
20920. .21114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 regulatory proteins, 20920. .21114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement(20579.
/gene="SC2E1.23c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="MTTQNSNHPCACGSYAFEVLIHENVGGDKVWQQKTTGCAATTQS
TFAPGHDAKLKSLLIAAGVGGHPVRQTTRDTVVVKDALKVAADLGWRDLVGEAIAKGS
                                                                                                                                                                                                                                                                                                                                                                              translation="MATTDGDEPPEEREFLTGDTPFVRVREALERLAALNEGPRVEQR/
                                                                                                                                                                                                                                                                                                                                                                                                             'db_xref="PID:g3192001"
                                                                                                                                                                                                                                                                                                                                                                                                                                /product="hypothetical protein SC2E1.25"
/db_xref="PID:e1296645"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      transl_table=11/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RGTGEVRTELGLGTFVADAK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref-"PID:g3192000"
/translation="MAEIISKRIADGTYPPGTRVPGIVELSAEFGIAASTAQKALAHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="putative transcriptional regulator"
/db_xref="PID:e1296644"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Pfam match to entry gntR PF00392, Bacterial
regulatory proteins, gntR family, score 43.92"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KIVGETGETEEVSAREWSVDQMPNLPLIDTRWPLCLCWKCNGNGTKGELRRR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="hypothetical protein SC2E1.23c"
/db_xref="PID:e1296643"
/db_xref="PID:g3191999"
                               'product="hypothetical protein
'db_xref="PID:e1296646"
                                                                                  transl_table=11/
                                                                                                       codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              translation="MTTRYPALPQSYAITRDRDTVIPRYLVVTALRGGQMAGLSIRVY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="hypothetical protein SC2E1.22"
/db_xref="PID:e1296642"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'db_xref="PID:g3191998"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .21204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .20869)
                                                                                                                                                   prophage gene, len:
                                                        SC2E1.26c"
                                                                                                                                                        65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96
                                                                                                                                                        very
                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RBS
/gene="SC2E1.29"
/note="PS00017 ATP/GTP-binding site motif A (P-loop)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24008.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24008.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="SC2E1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 2400
```

```
/db_xref="pid:g3192005"
/tanslation="MSTTTSEARDLAATQSGLDVPEHDTDRAAYFARLGFGVFPMPTN
/translation="MSTTTSEARDLAATQSGLDVPEHDTDRAAYFARLGFGVFPMPTN
/KMMPRAKGWPDLAMTTVEEVEEWMRSETPSGWQNIALTLDGWTVVDVDPKNGGTASLE
KLTAEYELPVTRTHHTASGPDSLHFITRADPDRPIKSGPLSSKYPGIDIKTGRGSLIV
APGSVLNGRRYEVVSAAEPAYAPSWLSEIRGDAQYPVVPSARSRTPSRASAGHSRAAT
LAELRALPPDDPGRGNWLTQVAGHLARNHTDHDSYLHEIDSESEVPHDLDRFMK
TADSIWEREQAKERYKAAPDKFKSLIWHHEHTDLGNGRRLRDLHGEDMRHAPGWGU
TUDGRRWARDDGARREMHSVADAISEAIESMEEKQRSDDLMRWFGRSCSGPGISAAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="SC2E1.29, unknown prophage ATP binding protein, len: 756 aa; some similarity to TR.038030 (EMBL:X76288) Streptomyces Bacteriophage phi-C31 early region ORF 9 (51: aa), fasta scores; opt: 360 z-score: 374.4 E(): 1.3e-13, 24.4% identity in 553 aa overlap, and to a putative prophage ORF from M. tuberculosis TR:O06608 (EMBL:Z95586) MTCY336.22 (471 aa), fasta scores; opt: 555 z-score: 535.2 E(): 1.4e-22, 29.8% identity in 416 aa overlap. Contains 2x PS00017 ATP/GTP-binding site motif A (P-loop)"
                               DTLTASYKNKSWFEFLPAFTPVMFGNAQPSIAFDSGVERRMKVIPMRAQISDGQKNPK
LVEQMMLNEGPAIMAWAVEGARLTAAESFVPDPPQVAQAVKEYKRENDHIGDFIEECL
VFDEGATVASDVVWGRYSKWIEAGGVDFVKKADDRAGKSLLVRMLKTWSIENGTPIES
                                                                                                                                              NEASYMLPIETEISDFDADPHKLLVGNGVVDLRTGELLPVDRKYLLTRGTTVEYDPNA
DCPMMMDFLGWAFQGDIEMIEYIQRMFGMCLIGNNAHQVAFFLYGPGRSGKTTLTRVL
SRLLGDYATSADLSVFNESSSGHNEPLARLAGARLVVFSETRQGQRINEAQFKKFTGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             regulator, len: 71 aa; similar to the N-terminus of many e.g. TR:Q37946 Salmonella typhimurium bacteriophage L repressor protein C2 (220 aa), fasta scores; opt: 127 z-score: 227.1 E():2e-05, 45.7% identity in 46 aa overlap. Contains probable helix-turn-helix motif at aa 21 to 42 (Score 1829, +5.42 SD)"
FKSSNTRKLRGVALND"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RPDVETLATIADVLGARMDDFVTARAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="SC2E1.27c, unknown prophage gene, len:
contains hydrophobic region near centre"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="possible RBS upstream complement(22505. .22867)
/gene="SC2E1.27c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="putative ATP binding protein"
/db_xref="PID:e1296649"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="SC2E1.29"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref-"PID:g3192004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="putative transcriptional regulator"
/db_xref="PID:e1296648"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LRELPPPAEDEQEPPAAA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /translation="MSEIPAIRRRRASQEDHIDCGRADECPVHEPLLGHPTRKVPSQL
DGAMTLAILAVAGVVSIFLFALKGVLDQVPDVIDSASRARDAWQRFKRKANEPPSPTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement (22505.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement(22177.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="MNLPLGVKVLIVVICTLISVIVAMVAGFLSHASGSSVGQAILYG
GGAFAGSLLLCLAVLSALGVL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      translation="MPARTFSPDALRQIRRQRGVTQYKLAASLGVHNTAISHYENGHR/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="SC2E1.28,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'note="possible RBS upstream of SC2E1.29"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="SC2E1.28"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'db_xref="PID:g3192003"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="SC2E1.27c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'gene="SC2E1.28"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 db_xref="PID:e1296647"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 product="hypothetical protein SC2E1.27c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                transl_table=11/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           possible prophage transcriptional 71 aa; similar to the N-terminus of many
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .22180)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of SC2E1.26c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        aa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (519
```

```
misc_feature
                                                                                                                                         /transiation="MyvyLaQQGIGRNEISRRTGISTASVSRIAAAHGIEFDGSQTEV
ALKARIAELKARQAGIALGLVEDITSARGLLRMATTHRDFAFAAKAISDLTQSAQRMT
PEITNEEELEEAKEGLRDLYFQMGLMREGFEAKYGVPLDSDEGRELMDKARQEDMENE
                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="SC2E1.33"
28184. .28672
/gene="SC2E1.33"
/gene="SC2E1.33"
/note="SC2E1.33, unknown prophage gene, len: 162 aa, contains probable helix-turn-helix motif at aa 11 to (Score 1192, +3.25 SD)"
'note="possible RBS
28659. .29075
                                                               28644. .28649
/gene="SC2E1.33"
                                                                                                                                                                                                                                                                            /transl_table=11
/product="hypothetical protein SC2E1.33"
/db_xref="PID:e1296653"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="hypothetical protein SC2E1.32"
/db_xref="pID:e1296652"
/db_xref="pID:93192008"
/tanslation="MNAPETEFADAGWVAITRDEGGRVGVKPVRMFELTGEGVTALTK
/NADGLMVPDPHAVEIINTDPLHAAKLAWLHKLVGVAERCTTDEARADLRRIAEWLIDW
                                                                                                                                                                                                                                                        'db_xref="PID:g3192009"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="SC2E1.32"
27766..28116
29ene="SC2E1.32"
/note="SC2E1.32, unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="SC2E1.31, possible prophage transcriptional regulator, len: 63 aa; similar to the N-terminus of many e.g. TR:E264367 (EMBL:N87420) Salmonella typhimurium bacteriophage ES18 gene C2 (216 aa), fasta scores; opt: 133 z-score: 207.9E(): 0.0024, 35.8% identity in 53 aa to 38 (Score 1786, +5.27 SD)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SPGDPGLRLADAEA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27754. .27759
/gene="SC2E1.31"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ransl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'codon_start=;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="possible RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="mfsgrkikearnkrgmsqaavaarmglsglyvsywengryapng
VNNYLLLRALGCELEEVTE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'db_xref="PID:g3192007"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="putative transcriptional regulator"
/db_xref="PID:e1296651"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="SC2E1.31"
27578. .27769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /translation="MNDLDRRGGRIFGRVDGEVDWPSGVDSPYRLMKLRDPEKYEREV
ARQVDAQRVIYEWAEMYGLKRAKMACCPRWLTHKVSRRCNSRCTAFGGGATDHRWLEH
GVGWVLDGQPVALTSASYGISDEYRARFEWWVNEDPRLAVALGGQGWYGYGSTQVLVW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                transl_table=11/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="SC2E1.31"
/note="SC2E1.31,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RTDVIEVMEPAPESVRALGYPQY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="hypothetical protein SC2E1.30"
/db_xref="PID:e1296650"
/db_xref="PID:93192006"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="SC2E1.30, unknown prophage gene, len:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               codon_start=]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'gene="SC2E1.30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="SC2E1.30"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26147. .26170
/gene="SC2E1.29"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   foote="possible RBS upstream of SC2E1.30" 6562. .27113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note="PS00017 ATP/GTP-binding site motif A (P-loop)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 26554
                          upstream.of SC2E1.34'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             upstream
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  prophage gene, len:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of SC2E1.32"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     aa,
                                                                                                                                                                                                                                                                                                                                                                                                                                          32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                     JOB24. .3.214

/gene="SC2E1.37"

/note="SC2E1.37"

                                                                                               /translation="MYQRNTDALDVAMGVVERAVQPVRLRAVAYARVSTEEQAKGYGV
QAALKKILRYIGRKOWDHVGTYTDEGISGSLEAADREDLKRLMADAHRQPKPFDIVVV
SEGRAIGRVGRAFWRWVWALEDIGIYVGVVEDDYDNSTPEGRKKMRRDADYAETEWET
                                 EEKLNTREVAARLNALNRETRSGVPWSHSNLRAKLLSESTINARVIFRNPNRAHAGHG
                                                                   (RKRTQGGLQEKAEDGGWPGGQPPYGYEIACQGQKGKSHLVQCAAEVKTLRWAWAMVV
                                                                                                                                                                                                                /db_xref="PID:g3192013"
                                                                                                                                                                                                                                                 /product="hypothetical
/db_xref="PID:e1296657"
                                                                                                                                                                                                                                                                                                                    /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="hypothetical protein SC2E1.36"
/db_xref="pID:e1296656"
/db_xref="pID:e1296656"
/db_xref="pID:e3192012"
/translation="MARKKTETAEATPCECSMYDALPADLTEEQVASGDFEVLTTGCT
/translation="MARKKTETAEATPCECSMYDALPADLTEEQVASGDFEVLTTGCT
/TRANSPARADEKAERAAARAARKAAPAPEVIKAKVGRVTYQGRMDGDHFVYEVKGQERR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="SC2E1.36,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RWTAGEWAYFATKSRQIRGGRQVAEFASEGLPPQAHIPGEKVTRP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /translation="MAATKVERPEEKTRDGRKVSFGANYTHDTKAKRRAGLTTAGRPK
VETVGAGTVVRSPRRWLPWAVFGTNSAVLGGTWAVAELGPAVGGLVVGVALWAGYRIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'gene="SC2E1.36"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note="possible RBS upstream of SC2E1.36"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29493. 29936
/gene="SC2E1.35"
/note="SC2E1.35", unknown prophage gene, len:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      codon_start=]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene-"SC2E1.36"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'db_xref-"PID:g319201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    product="hypothetical protein SC2E1.35"
db_xref="PID:e1296655"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29493.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="Msnrdfsedvqqprstdqpsvddlraemygqqvagrfhyresrt
Erdsaviqgtpvlgdgtmtddqaaeirksfgigadlrhaaqaaesymdrrdptsghti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene-"SC2E1.34"
28659. .29075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  note="possible RBS upstream of SC2E1.35"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RTYGNGRVVDLDAEPTQTGSDRVEYPRVWYGDDPGA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="SC2E1.34"
/note="SC2E1.34,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene="SC2E1.35"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'product="hypothetical protein SC2E1.34"
'db_xref="PID:e1296654"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      _xref="PID:g3192010"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .30754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown prophage gene, len: 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown prophage gene, len:
                                                                                                                                                                                                                                                                         protein SC2E1.37"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          138
```

RBS

CDS

CDS gene RBS

gene

Sg gene RBS

Sg

```
gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sgo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                            34468. 35025

/gene="SC2E1.39", possible transcriptional regulator, len:
/note="SC2E1.39", possible transcriptional regulator, len:
/note="SC2E1.39", possible transcriptional regulator, len:
/note="SC2E1.39", possible transcriptional TR:P72569
(EMBL:U58281) tetR homologue whiR (179 aa) (86.6% identity
in 179 aa overlap) and similar to several putative
transcriptional regulators of the tetR family e.g.
TR:E1247678 putative transcriptional regulator SC10A5.11
(S.coelicolor) (198 aa), fasta scores; opt: 434 z-score:
720.5 E(): 6.8e-33, 41.5% identity in 171 aa overlap.
Contains probable helix-turn-helix motif at aa 29 to 50
(Score 1618, +4 70 SD) and Pfam match to entry tetR
PF00440, Bacterial regulatory proteins, tetR family, score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="SCZE1.38, whiG, RNA polymerase sigma factor WhiG, len: 280 aa; identical to RPSW_STRCO RNA polymerase sigma factor whiG (280 aa). Also highly similar toRPSD_BACSU RNA polymerase sigma-D factor (sigma-28) (254 aa)(E(): 0, 43.0% identity in 242 aa overlap) and FLIA_ECOLI RNA polymerase sigma factor for flagellar operon (sigma F) (239 aa)(E(): 0, 42.8% identity in 229 aa overlap). Contains PS00715 and PS00716 Sigma-70 factors family signatures 1 and 2, Fam match to entry sigma-PF00140, Sigma-70 factors, score 342.3 and probable helix-turn-helix motif at aa 245 to 266 (Score 1657, +4.83 factors)
/product="putative transcriptional regulator"
/db_xref="PID:e1296659"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="Pfam match to entry sigma70 PF00140, factors, score 342.03"
33725 ...33766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   33626. .34315
/gene="whig"
                                                                       /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             34468.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="PS00715 Sigma-70 factors family signature 1" 34229. 34309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RLLARAINTLPEREKTVVTLYYYEGLTLAEIGNVLGVTESRVSQIHTKSVLQLRAKLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYAITRIRGAMIDELRALDWIPRSVRQKARNVERAYATLEARLKRTPSESEVAVEMGI
AVEDLHAVFSQLSLANVVALEELLHAGGEGGGRLSLMDTLEDTAADNPVEVAEDRELR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RLREQLILHYSPLVKYVAGRVSVGLPPNVEQADFVSSGVFGLIDAIEKFDVDREIKFE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="SC2E1.39"
34468. .35025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'note="possible RBS upstream of SC2E1.39"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="whig"
/note="PS00716 Sigma-70 factors family signature 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="RNA polymerase sigma factor Whig"
/db_xref="PID:e1296658"
/db_xref="PID:g3192014"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AIAQASAALLEERRQLADLRDEAAAWLEETEAAEQRARDLEALATAARTRLADMDPAE
QGEVLALLDVKYTITGFVPKKPKIGLTCSLAEWFKVAGRLVPSELTDDMWAAAEPVVXA
WEPSNIKLRGCRLMLDAMFYKARTGCRWDDLPERFGPWKGIHSRYKTWRNCGVWDEIM
AALPVDGPGYRPVPEINLVPPFRYEGRYDPRVLAGPDIQEEVVRPETGVPRPATSALS
AGVHEMLRGDAVLVGDAAEVVELVGAMGELPPERRGPVLPTDLLESRTRQVLAGLPGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'gene="wh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          transl/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Site-specific recombinases,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTATAGEVALRAQTTQDDAVARLYELRALGYVERHGDGWKLTRQAMISVRGGRSPC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              translation="MPQHTSGSDRAAIPPAARDGGSVRPPAPSTLDELWRSYKTTGDE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="whig"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="whig"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            33497.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="SC2E1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Pfam match to entry recombinase PF00239,
Site-specific recombinases, score 36.16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      note-"PS00397 Site-specific recombinases active site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .34453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .34339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sigma-70
```

gene

NFSTYYKRLQRLKELEQIDFEDVAASGLTKKELLVLSREKAKLEKTLGGIREMSKYPS AVWIVDTKKEHIAVGEARKLNIPVVAILDTNCDPDEVDYKIPGNDDAIRSVTLLTRVI ADAVAEGLIARSGAAGGAKGDKAAGEPLAAWERDLLEGEKAEKKDDAEAAEKPAEAPA

```
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="SC2E1.41, rpsB, 30S ribosomal protein S2, len: 310
aa; almost identical to RS2_STRCO 30S ribosomal protein S2
(242 aa), E(): 0, 96.7% identity in 242 aa overlap and
also highly similar to many others e.g. RS2_ECCLI 30S
ribosomal protein S2 (240 aa), fasta scores; opt: 744
z-score: 950.7 E(): 0, 50.4% identity in 224 aa overlap.
Contains pS00962 Ribosomal protein S2 signature 1 and
pS00211 ABC transporters family signature (probably a
false pssitive). Also contains Pfam matches to entry S2
pF00318, Ribosomal protein S2, score 304.89 and to entry
60s_ribosomal pF00428, 60s Acidic ribosomal protein, score
24.36. Note that this sequence is longer than RS2_STRCO
due to a sequence difference around 235 aa. This sequence
has a C-terminal extension not present in other rpsB. The
M. tuberculosis protein also has a C-terminal extension
but with a differentsequence. Our sequence has been
checked, and is also confirmed by sequence from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="rpsB"
35948. .36880
/gene="rpsB"
/note="SC2E1.41,
/product="30S ribosomal protein S2"
/db_xref="PID:e1296661"
/db_xref="PID:e1296661"
/db_xref="PID:e3129617"
/translation="MAVVTMRELLESGVHFGHQTRRWNPKMKRFIFTERNGIYIIDLL
QSLSTIDRAYEFVKETVAHGGTVMFYGTKKQAQEAIAEQATRYGMPYVNQRWLGGMLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(34979. .35659)

/gene="SC2E1.40c"
/gene="SC2E1.40c"
/note="SC2E1.40c"
/no
                                                                                                                                                                                                                                                                                                                                                                                                                    overlapping cosmid 6A9.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="possible RBS upstream of rpsB" 35948. .36880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       coelicolor ribosomal protein factor Ts (tsf) genes from 1 35934. .35939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note-"overlap with cosmid 6A9 (unfinished)" complement(35666. .35669) /note-"possible RBS upstream of SC2E1.40c" 35757. .37919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YAVGPMGRVDPAVPPVARHWFVGTRPAVLRGWDPPANPYGPGHRGVDLAAGGGAPVRA
VAAGRVSFAGPVGGRGVVSVELTGTGEPPLRTTFAPVDAAVRKGDEVAAGEPLGTVQP
TGSHCTACLHWGLLRGEVYLNPLSLLPPWLLDAGPSRLLPVAGVPVPGRGGISPVRRA
                                                                                                                                                                                                                                                                                                             transl_table=11/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="97.4% match to AF034101 AF034101 Streptomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement (35024.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         regulatory proteins, tetm complement(34979. .35659) /gene="SC2E1.40c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="Maehrsmoraalldaarsllsdggtealtepalaertglarssy
Yeyersraavveelcavdepwaaeveaameretapdaveayvrtoldlygdrhra
VVA15ASELDAGAREKIRAAHGGLIAMIVEALGEMGHGOPRLAAMLLOGVVDAAVRRI
ELGAAEEPGAITEAAVSMALRGVRG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product="hypothetical protein SC2E1.40c'
/db_xref="PID:e1296660"
/db_xref="PID:g3192016"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="Pfam match to entry
regulatory proteins, tetR f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             translation="MRARARVVVLSAVLAVLAVPTAQAGRAAGPPPPATAAAAGWALP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .38962)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               family,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tetR PF00440, Bacterial family, score 29.18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S2 (rpsB) and elongation to 2154"
```

CDS

```
106 TGCAAAAGCAGCCCGCGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCTGCCGAGTG 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                        GTGGCCGCCTGGAGCAATAATTATGCGGTGGACTGCCCTCAACACTGTGACAGCAGTGAG 105
                                                      GAGGGCGCGTGCGCGAGTGGTGGTGCTGTCGGCCGTCCTGGCCGTCCTGGCGGTCCCGAC 35598
                                                                                                                                         th 7.0%;
I Similarity 54.7%;
76; Conservative
                                                                                                                                                                                                                                                      6233 a
                                                                                                                                                                                                                                      SLPIVVFELLKEGNIARAVKGEKIGTLVGDQGSRD'
1 13696 c 13758 g 5275 t
                                                                                                                                                                                                                                                          /product="uridylate kinase"
/db_xref="pin:e129663"
/db_xref="pin:e129663"
/db_xref="pin:e129663"
/translation="MSSTRAEKSDDGKVSGREMLKLSGEAFSGGGLGVDPDVVHAIA
/ETANVRDGAOIAIVIGGGNEFRGAELQVRGMDRARSDYMGMLGTVMNCLALQDELE
KEGVOCRVOTAITMGQVAEPYIFLRAVRHLEKGRVVIFGAGMGMPYFSTDTTAAQRAL
EIDAEALLMGKNGVDGVYDSDPKTNPDAVKEDALGYGEVIFRDLKVADATAVTLCRDN
                                                                                                                                                                                                                                                                                                                                                                                                                        /note-"SC2E1.43, pyrH, uridylate kinase, len: 253 aa; highly similar to many e.g. PYRH_ECOLI uridylate kinase (EC 2.7.4.-) (240 aa), fasta scores; opt: 668 z-score: 968.6 E(): 0, 45.9% identity in 233 aa overlap"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3801/.
/gene="pyrH"
2877
                                                                                                                                                                                                                                                                                                                                                                                                         transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             37008.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note="possible RBS upstream of pyrH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GQKGVAKREGRSAENGAVVSIIADDNTSGVLVELKCETDFVAKGEKFQNVATAIAEHV
AKAAPADLEALLASEIEPGKTVQAYVDEANANLGEKIVLDREAQFSGGFVTAYMHRTM
PDLPPQIGVLVELDKPNAEIAKGVAAHIAAFAPKYLSKEDVPAEVVESERRVAEETTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note-*SC2E1.42, tsf, elongation factor Ts, len: 278. Almost identical to EFTS_STRCO elongation factor TS (EF-TS) (276 aa), fasta scores; opt: 1695 z-score: 2425.0 similar to many others e.g. EFTS_ECOLI (282 aa) fasta scores; opt: 321 z-score: 681.2 E(): 1e-30, 38.4% identity in 276 aa overlap and fasta in 276 aa overlap. Contains PS01126 Elongation factor Ts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  note-"SC2E1.43, pyrH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note-"PS01126 Elongation factor Ts signature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="PID:93192018"
/translation="MANYTAADVKKLRELTGAGMMDCKKALDEAEGNVEKAVEALRIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /transl_table=11
/product="elongation factor Ts"
/db_xref="pID:e1296662"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .EGKPEAALPKIVEGRLNGFFKDATLLGQPYALDNKKSVQKVLEEAGVSLKRFSRIKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Acidic ribosomal protein, 36975. .37811
/gene="tsf"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="PS00211 ABC transporters family signature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="Pfam match to entry 60s_ribosomal PF00428, acidic ribosomal protein, score 24.36"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Pfam match to S2, score 304.89" 36461. .36505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'gene="rpsB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="PS00962 Ribosomal protein S2 signature
35972. .36625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="rpsB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           37811
                                                                                                                                      0;
                                                                                                                                  Score 38.2; DB 36;
Pred. No. 0.52;
0; Mismatches 63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    entry S2 PF00318, Ribosomal protein
                                                                                                                                                                 Length 38962;
                                                                                                                                  Indels
                                                                                                                               0;
                                                                                                                           Gaps
                                                                                                                           0
                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                   FEATURES
          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 9
AC004840/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  35537 GGCCCTGCCCTACGCGGTG 35519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           166 TGCGCTGCAGGGCGGGGAG 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 (bases 1 to 162485) Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The sequence of Homo sapiens clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human.
                                                                                                                                                                                                                                                                                                                                                                                                           1549
1567
3039
3057
4513
4531
4531
5986
6004
11154
                                                                            ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HTGS_PHASE1.
                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="DJ0607J02"
                                                                                                                                                          Location/Qualifiers
     6.8%;
Score 37.4;
                                                                                                                                                                                                                                                                                                                                                                                    gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                        gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hominidae;
                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                       unknown
of 1455
                                                                 38502 t
                                                                                                                                                                                                                                                                                                                                                                                                                    of 5150
```

CDS gene

RBS

Ş В

В

18;

Length 162485;

35657

46

BASE COUNT ORIGIN

Matches Query Match Best Local

Local

```
as runs of N as a continuity a single finished sequence with the same accession by a single finished sequence with the same accession 1548: contig of 1548 bp in length 1565: gap of unknown length 3038: contig of 1472 bp in length and the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same accession to the same
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
Submitted (12-JUN-1998) Genome Sequencing Center, Washington
University School of Medicine, 4444 Forest Park Parkway, St.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         *** WARNING: Phase 1 High Throughput Genome Sequence ***
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Vertebrata; Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              **** SEQUENCING IN PROGRESS *** Homo sapiens phase 1, 12 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       which the order is not known; their order in this record arbitrary. In some cases, the exact lengths of the gaps between the contigs are also unknown; these gaps are pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                between the contigs are also unknown; these gaps are presented as runs of N as a convenience only. When sequencing is complete, the sequence data presented in this record will be replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17330: gap of unknown length
28043: contig of 10713 bp in 1e
28061: gap of unknown length
41728: contig of 13657 bp in 1e
41746: gap of unknown length
64066: contig of 2320 bp in 1e
64084: gap of unknown length
97366: contig of 33282 bp in 1e
97384: gap of unknown length
                                                                                                                                                                                                                                                          97384: gap of unknown length
128426: contig of 31042 bp in
128444: gap of unknown length
162485: contig of 34041 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          : gap of unknown
: contig of 1456
: gap of unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             lg of 10713 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bp in length
length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bp in length
length
198 others
                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         clone DJ0607J02; HTGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12-JUN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Louis,
```

```
밁
                                  Ş
                                                                       밁
                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MUSFISP12B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 10
                                                                                                                                                       Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Low
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             90833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           90893 GCAGCACTCACCACCCCACGGGGTTGATCTTGTACCAGAACTTTTTCTGTTCGATCATGT 90834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                90953 GGTGGGCACTGGGACCGCTCCAATCTCCCACAGGGACGGCAGGATGTGAGGCCCGGGGCT 90894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                               polyA_signal
                                    174
                                                                                                        114
 320
                                                                       260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300 CTGTCCCTACGGCACCTTCGGGATGGATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                AGGGCGGGGAGAAACTTG 191
                                                               CTGCCCCGCCGGCGTGAGCCTGGTGCTGGACGGCTGCGGCTGCTGCGCGTCTGCGCCAA 319
                                                                                   CAGCCCGCGCTGCAAGAGGACAGTGCTCGACCGACTGTGGCTGCCGAGTGTGCGCTGC 173
GCAGCTGGGAGAACTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGAGAAACTTGCTACCGCACAGTCTCAGGCATGGATGGCATGAAGTGTGGCCCGGGGCT 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTTGCACTCTGCTCGCTGGGGGGGATTC 90803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGGTGTCAGCCTTCTAATGGGGAGGATCCTTTTGGTGAAGAGTTTGGTATCTGCAAAGA 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 2267)
1 (bases 1 to 2267)
1 (bases 1 to 2267)
Ryseck,R.-P., MacDonald-Bravo,H., Mattei,M.-G. and Bravo,R.
Ryseck,R.-P., MacDonald-Bravo,H., Mattei,M.-G. and Bravo,R.
Structure, mapping and expression of fisp-12, a growth fact
inducible gene encoding a secreted cysteine-rich protein
Cell Growth Differ. 2, 225-233 (1991)
                                                                                                                                                                                                                              chromosome 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cysteine-rich protein; growth factor-inducible gene. Mus musculus (sub_species domesticus) liver/kidney cDNA Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Eutheria; Rodentia; Sciurognathi; Myomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g193315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MUSFISP12B :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity 53.0
80; Conservative
                                                                                                                                                                                                                                               570
                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                               /product="FISP-12 protein"
/db_xref="FISP-12 protein"
/db_xref="FID:919316"
/db_xref="FID:919316"
/translation="MLASVAGFISLALVLLALCTRPATGODCSAQCQCAAEAAPHCPA
GVSLVLDGCGCCRVCAKOLGELCTERDPCDPHKGLFCDFGSPANRKIGVCTAKDGAPC
VFGGSVYRSGESFQSSCXXQCTCLDGAVGCVPLCSMDVRLPSPDCPFPRRVKLPGKCC
KEWVCDEPKDRTAVGPALAAYRLEDTTGPDPTMARANCLVQTTEWSACSKTCGMGIST
RVTNDNTFCRLEKQSRLCMVRPCEADLEENIKKGKKCIRTPKIAKPVKFELSGCTSVK
                                                                                                                                                                                                                                       2224. .225
/gene="fisp-12"
569 c 582 g
                                                                                                                                                                                                                                                                                            FESLYYRKMYGDMA"
                                                                                                                                                                                                                                                                                                               TYRAKFCGVCTDGRCCTPHRTTTLPVEFKCPDGEIMKKNMMFIKTCACHYNCPGDNDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="liver/kidney"
/map="A3-B1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /sub_species="domesticus"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="fisp-12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                       codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene="fisp-12"
                                                                                                                                                       6.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2267 bp mRNA
2 protein (fisp-12) mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53.0%;
337
                                                                                                                                     Score 36.4; DI
Pred. No. 1.3;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. 1.1;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            330
                                                                                                                                                                                                                                             546
                                                                                                                                                                       DB
                                                                                                                                                            13;
                                                                                                                                     26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complete cds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ROD
                                                                                                                                                                    Length
                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Myomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   09-JUL-1991
                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ç
                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                      KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 12
MUSFISP12A
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              polyA_site
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                     UID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
MUSTGFB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Locus
                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sig_peptide
mat_peptide
polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       386 GCAGCTGGGAGAACTGTG 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        326 CTGCCCGGCGGCGTGAGCCTGGTGCTGCGGCTGCGGCTGCTGCGCCCAA 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             114 CAGCCCGCGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCTGCCGAGTGTGCGCTGC 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               174 AGGGCGGGGAGAAACTTG 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11
l (bases 1 to 4128)
Ryseck,R.-P., MacDonald-Bravo,H., Mattei,M.-G. and Bravo,R.
Structure, mapping and expression of fisp-12, a growth factor
inducible gene encoding a secreted cysteine-rich protein
Cell Growth Differ. 2, 225-233 (1991)
                                                                                                                                                                                                                                                                                                                                                                           MUSFISP12A 4128 bp DNA ROD (
Mouse FISP-12 protein (fisp-12) gene, complete cds.
M70641
                                                                                                                                                                                            Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Eutheria; Rodentia; Sciurognathi; Myomorpha;
                                                                                                                                                                                                                                                       Mus musculus
Mus musculus
                                                                                                                                                                                                                                                                          cysteine-rich protein; growth factor-inducible gene.
Mus musculus (sub_species domesticus) liver/kidney DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 Similarity 66.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          M80263
g201945
                                                                                                                                                                  Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 (bases 1 to 2330)
Brunner, A., Chinn, J., Neubauer, M.G. and Purchio, A.F.
Identification of a gene family regulated by transforming
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Eutheria; Rodentia; Sciurognathi; Myomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      factor-beta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       transforming
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mouse mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MUSTGFB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cell Biol. 10, 293-300 (1991)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              204. .278
279. .1247
2291. .2296
2318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
//down_stort=1
//down-stort=1
//down
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYRAKFCGVCTDGRCCTPHRTTTLPVEFKCPDGEIMKKNMMFIKTCACHYNCPGDNDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FESLYYRKMYGDMA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /ceri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'organism-"Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           growth factor-beta.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     598 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .1250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 l_line="AKR-2B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 36.4; DE Pred. No. 1.3; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     548
                                                                                                                                                                                     Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ROD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 2330;
                                                                                                                                                                                     Myomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Myomorpha; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                            Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

MEDLINE

91363290

```
₽
                               Ş
                                                            밁
                                                                                  δÃ
                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                 Matches
                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
1321 GCAGCTGGGAGAACTGTG 1338
                                                            1261
                                                          114 CAGCCCGCCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCTGCCGAGTGTGCGCTGC 173
                                                                                                                                                                                                                                           exon
                                                                                                                                                                                                                                                                                                                           exon
                                                                                                                                                                                                                                                                                  intron
                                                                                                                                                                                                                                                                                                                                                                                                             exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            exon
                                                                                                                                                                                                                                                                                                                                                                 intron
                                                                                                          Local Similarity 66.7 nes 52; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                   intror
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATA_signal
                           AGGGCGGGGAGAAACTTG 191
                                            CTGCCCGGCGGCGTGAGCCTGGTGCTGGACGGCTGCGGCGGCGTGCGGCGAA 1320
                                                                                                                                                                                  chromosome 10
                                                                                                                                                                                               1061
                                                                                                                                                                                                                      2642. .4006
/gene="fisp-12"
                                                                                                                                                                                                          /number=5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="Mlasyagpislalvllalctrpatgodcsagcqcaaeaaphcpa

GVSLVLDGCGCCRVCAKQLGELCTERDPCDPHKGLFCDPGSPANRKIGVCTAKDGAPC

VFGGSVYRSGESFOSSCXYQCTCLDGAVGCVPLCSMDVRLPSPDCPFPRRVKLPGKCC

KEWVCDEPKDRTAVGPALAAYRLEDTFGDDPTMMRANCLVQTTEWSACSKTCGMGIST

RVTNDNTFCRLEKQSRLCMVRPCEADLEENIKKGKKCIRTPKIAKPVKFELSGCTSVK
                                                                                                                                                                                                                                                    'number=
                                                                                                                                                                                                                                                              'gene="fisp-12"
                                                                                                                                                                                                                                                                                           'number=
                                                                                                                                                                                                                                                                                                    gene="fisp-12"
                                                                                                                                                                                                                                                                                                                                                                                      'gene="fisp-12"
                                                                                                                                                                                                                                                                                                                                                                                                                    'number=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYRAKFCGVCTDGRCCTPHRTTTLPVEFKCPDGEIMKKNMMFIKTCACHYNCPGDNDI
                                                                                                                                                                                                                                                                                                                                  number=3
                                                                                                                                                                                                                                                                                                                                             gene="fisp-12"
                                                                                                                                                                                                                                                                                                                                                                                                                               1425. .1674
/gene="fisp-12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1202. .1424
/gene="fisp-12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FESLYYRKMYGDMA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'gene="fisp-12"
                                                                                                                                                                                                                                                                                                                                                                             number=3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      number=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 join(1052. .1114,1202. .1424,1675. .1926,2059.
2642. .2938)
/gene="fisp-12"
join(1052. .1114,1202. .1424,1675. .1926,2059.
2642. .2938)
/gene="fisp-12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2642. .4006)
/gene="fisp-12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="FISP-12 protein"
/db_xref="PID:g193314"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /tissue_type="liver/kidney"
/map="A3-B1"
798. .804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       oin(833. .1114,1202.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene="fisp-12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /sub_species="domesticus"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                            umber=2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 organism="Mus musculus"
                                                                                                                                                                                             1039 с
                                                                                                                          6.6%;
                                                                                                                                                                                                                                                                                                                                                                                                       .1926
                                                                                                                                                                                                                                                                             .2641
                                                                                                                                                                                                                                                                                                                      2270
                                                                                                                                                                                                                                                                                                                                                               2058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  fisp-12"
                                                                                                                    Score 36.4; D
Pred. No. 1.4;
                                                                                                                                                                                         984 g
                                                                                                         Mismatches
                                                                                                                                                                                           1044 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .1424,1675. .1926,2059.
                                                                                                                                DB 13;
                                                                                                       26;
                                                                                                      Indels
                                                                                                                              Length 4128;
                                                                                                    0,
                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .2270,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .2270,
                                                                                                 0;
```

```
KEYWORDS
SOURCE
                                                                                                                 A28405
                                                 ACCESSION
                                                                                DEFINITION
                                                                                                                                                                                  밁
                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 1
                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                213
                                                                                                                                                                                                       173 CAGGGCGGGGAGAAACTTGCTACC 196
                                                                                                                                                                                                                                                 113 GCAGCCCGCGCTGCAAGAGGACAGTGCTCGACGACTGTGGCTGCTGCCGGAGTGTGCGCTG 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SdC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                        GGCAGCGCGGAGAGAGCTGCTCCC 236
                                                                                                                                                                                                                               GCTGCGCCCCGGGGGTGCCCGCAGTGCTGGACGGCTGCGGCTGTTGCCCTGGTGTGCGCCC 212
                                                nov gene.
A28405
                                                               Sequence I that nov gene.
                                                                                            A28405
                                                                                                                                                                                                                                                                                                               54;
                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Coturnix japonica.
Coturnix japonica
Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Archosauria; Aves; Neognathae; Gailiformes;
Phasianidae; Phasianinae; Coturnix.

1 (bases 1 to 1927)
Weiskirchen,R. and Bister,K.
Suppression in transformed avian fibroblasts of the nov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bister.K.

Direct Submission

Submitted (08-AUG-1994) Bister K., University of Innsbruck,

Submitted of Biochemistry, Peter-Mayr-Strasse la, Innsbruck
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CJU13063
Coturnix
Complete
U13063
g532696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protooncogene
Unpublished
2 (bases 1 to 1927)
                                                                                                                                                                                                                                                                                                        6.6%;
nilarity 64.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                            473 a
                                                                                                                                                                                                                                                                                                                                                                                                  /Gb_xref="PID:9532697"
//db_xref="PID:9532697"
//translation="MEPGGGHSLPVLLLLLLLLRPSEVNGREAPCPRPCGGRCPAE
PPRCAPGVPAVLDGCGCCLVCARQRGESCSPLLPCDESGGLYCDRGPEDGGTGICMV
LEGDNCVFDSHIX RNGESTFOPSCKXYQCTCRDGGIGCLPRCNLGILLPGPDCPFPRKIE
VPGECCEKWVCEPRDEVLLGGFAMAAYRQEATLGIDVSDSANCIEOTEWSACSRSC
GMGFSTRVTNRNQQCEMVKQTELCMMRPCENEEPSDKKKKCIRTKKSMKAVRFEYKN
CTSVQTYKPRYCGLCNDGRCCTPHNTKTIQVEFRCPGGKFLKKPMMLINTCVCHGNCP
OSNNAFFQPLDPMSSEAKI"
0SNNAFFQPLDPMSSEAKIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Coturnix japonica"
/db_xref="taxon:9094"
/clone="w230"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene="nov"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /dev_stage="embryo"
14. .1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1927 bp mRNA VRT 28-AUG-1994
Japonica cellular proto-oncogene protein Nov (nov) mRNA,
cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'gene="nov"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               clone_lib="QEF cDNA library of R. Weiskirchen and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cell_type="fibroblast"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .ocation/Qualifiers
                                                          1975 bp DNA PAT 23-JUN-1995
hat hybridises under stringent conditions to g.gallus
                                                                                                                                                                                                                                                                                                   Score 36; DB 5
Pred. No. 1.7;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                    5;
                                                                                                                                                                                                                                                                                                     30;
                                                                                                                                                                                                                                                                                                                                  Length 1927;
                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Innsbruck,
                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7
                                                                                                                                                                                                                                                                                              0
```

unidentified.

```
Š
                                            밁
                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
SOURCE
ORGANISM
                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 15
A28444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                     DIN
                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                              Snoo
                                                                                           Query Match 6.5%; Score 35.8; DB 6; Best Local Similarity 52.9%; Pred. No. 1.9; Matches 101; Conservative 0; Mismatches 87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 6.5%; Score 35.8; DB 6; Length 1975; Best Local Similarity 52.9%; Pred. No. 1.9; Matches 101; Conservative 0; Mismatches 87; Indels 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            186 AACTTGCTACC 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            230 GAGCTGCTCCC 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             170 AGTGCCCGCCGTGCTGGACGGCTGCCGGCTGCTGCGTGTGCGCCCGGCAGCGGGGGA 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              126 CAAGAGGACAGTGCTCGACGACTGTGGCTGCCGGGTGTGCGCTGCAGGGCGGGAGA 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              113 GTGCCCCGGCCCTGCGGGGGGGCGCTG----CCCCGGGAGCCGCCGCGCGTGCGCCCCGGG 169
                  66
                                            53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6 CGTCTTGCTGCTGACCACGCTCCTCGTGCCTGCACACCTGGTGGCCGCCTGGAGCAATAA 65
                                                                      6
NUCLEOTIDE SEQUENCES HYBRIDIZABLE WITH THE NOV GENE OF CHICKENS PATENT: WO 9300430-A 40 07-JAN-1993;
                                                                                                                                                                                                                                                                                                                                                            unidentified unidentified
                                                                                                                                                                                                                                                                                                                                                                                                 g1248709
                                                                                                                                                                                                                                                                                                                                                                                                                nov mRNA sequence
A28444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unidentified unclassified
                                                                                                                                                                                                                                                                                                                                               unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                         A28444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUCLEOTIDE SEQUENCES HYBRIDIZABLE WITH THE NOV GENE OF CHICKENS PATENT: WO 9300430-A 1 07-CAN-1993;
Location/Qualifiers
1. 1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to 1975)
                                                                                                                                                                                                                                                                                                                                (bases 1 to 1975)
                                                                                                                                                                               522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             522 a
                                                                                                                                                                          /organism="artificial sequence"
/db_xref="taxon:29278"
451 c 486 g 516 t
                                                                                                                                                                                                                        /organism="unidentified"
/db_xref="taxon:32644"
1. .1975
                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="artificial sequence"
/db_xref="taxon:29278"
451 c 486 g 516 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="unidentified"
/db_xref="taxon:32644"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .1975
                                                                                                                                                                                                                                                                                                                                                                                                                                        1975 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA
                                                                                              87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         87; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                         PAT
                                                                                                                        Length 1975;
                                                                                              Indels
                                                                                              <u>ω</u>
                                                                                              Gaps
                                                                                              ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ۳
```

Search completed: May \cdot 3, 1999, 16:12:45 Job time: 4404 sec